



PECO NUCLEAR

A Unit of PECO Energy

PECO Energy Company
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

February 29, 2000

Docket Nos. 50-277
50-278

License Nos. DPR-44
DPR-56

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Peach Bottom Atomic Power Station, Units 2 and 3
License Change Application ECR 99-02764

Dear Sir/Madam:

PECO Energy Company (PECO Energy) hereby submits License Change Application ECR 99-02764, in accordance with 10 CFR 50.90, requesting a change to the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3 Facility Operating Licenses. This proposed change will add a note to the Completion Time of Condition A for Technical Specification 3.7.2 ("Emergency Service Water (ESW) System and Normal Heat Sink"). This note will provide a one-time extension to the completion time for one Emergency Service Water (ESW) subsystem inoperable from 7 to 14 days. This note will allow the replacement of one ESW pump, currently scheduled to occur in May 2000, and will expire on May 31, 2000.

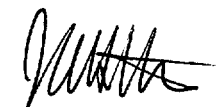
Information supporting this request is contained in Attachment 1 to this letter, and the marked up pages showing the proposed changes to the PBAPS, Units 2 and 3 TS are contained in Attachment 2.

A copy of this License Change Application, including the reasoned analysis about a no significant hazards consideration, is being provided to the appropriate Pennsylvania State official in accordance with the requirements of 10 CFR 50.91(b)(1).

We request that this amendment to the PBAPS, Units 2 and 3 TS be approved by April 19, 2000 for PBAPS, Units 2 and 3 in order to support the scheduled pump replacement in May 2000.

If you have any questions, please do not hesitate to contact us.

Very truly yours,


James A. Hutton

A001

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Page 2

Director - Licensing

Enclosures: Affidavit, Attachment 1, Attachment 2

cc: H. J. Miller, Administrator, Region I, USNRC
A. C. McMurtray, USNRC Senior Resident Inspector, PBAPS
R. R. Janati, Commonwealth of Pennsylvania

COMMONWEALTH OF PENNSYLVANIA:

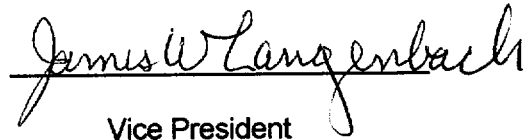
: SS.

COUNTY OF CHESTER

:

J. W. Langenbach, being first duly sworn, deposes and says:

That he is Vice President of PECO Energy Company; the Applicant herein; that he has read the attached License Change Application ECR 99-02764, for Peach Bottom Facility Operating Licenses DPR-44 and DPR-56, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.


Vice President

Subscribed and sworn to

before me this *29th* day

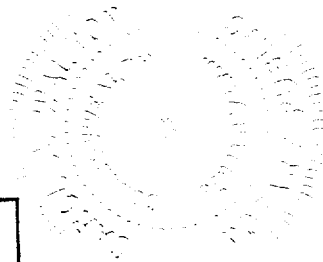
of *February* 2000.



Notary Public

Notarial Seal
Carol A. Walton, Notary Public
Tredyffrin Twp., Chester County
My Commission Expires May 28, 2002

Member, Pennsylvania Association of Notaries



ATTACHMENT 1

**PEACH BOTTOM ATOMIC POWER STATION
UNITS 2 AND 3**

**Docket Nos. 50-277
50-278**

**License Nos. DPR-44
DPR-56**

**LICENSE CHANGE APPLICATION
ECR 99-02764**

Extending the Completion Time of Condition A for Technical Specification 3.7.2 ("Emergency Service Water (ESW) System and Normal Heat Sink")

Supporting Information - 6 Pages

Introduction

PECO Energy Company, Licensee under Facility Operating Licenses DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3, requests that the Technical Specifications (TS) contained in Appendix A to the Operating License be amended to add a note to the Completion Time of Condition A for Technical Specification 3.7.2 ("Emergency Service Water (ESW) System and Normal Heat Sink"). This note will provide a one-time extension to the Completion Time for the Condition of one Emergency Service Water (ESW) subsystem inoperable from 7 to 14 days. This note will allow the replacement of one ESW pump currently scheduled to occur in May 2000, and will expire on May 31, 2000. The TS pages showing the proposed changes are contained in Attachment 2. This License Change Application provides a discussion and description of the proposed changes, a safety assessment of the proposed changes, information supporting a finding of No Significant Hazards Consideration, and information supporting an Environmental Assessment.

Discussion and Description of the Proposed Changes

Limiting Condition for Operation (LCO) 3.7.2 ("Emergency Service Water (ESW) System and Normal Heat Sink") requires that two ESW subsystems be operable during MODES 1, 2, and 3. As discussed in Action A, with ESW subsystem inoperable, the Required Action is to restore the ESW subsystem to Operable status within 7 days, or be in Mode 3 within 12 hours (Condition B), and Mode 4 within 36 hours. This change adds a note to the Completion Time of Condition A for Technical Specification 3.7.2 ("Emergency Service Water (ESW) System and Normal Heat Sink"). This note will extend the completion time for one Emergency Service Water (ESW) subsystem inoperable from 7 to 14 days.

As demonstrated by ongoing testing performed in accordance with the Inservice Testing Program, the performance of the "B" ESW pump is degrading as measured by reduced system flow. Although the pump currently meets operability requirements, performance is degrading such that the pump will eventually become inoperable. Therefore, the pump has been scheduled for replacement during May 2000. Replacement of the ESW pump is anticipated to occur within the seven day Completion Time. However, in order to preclude the possible need for regulatory action on an expedited basis to extend the Completion Time, PECO Energy Company is requesting a change to the TS. Seven days is considered the maximum amount of additional time necessary to address potential uncertainties that would prevent restoring the pump to operable status. However, during the replacement of the "B" ESW pump, appropriate actions will be in place to ensure that the remaining 100% capacity "A" ESW pump/subsystem is maintained operable.

PECO Energy is requesting approval of the proposed TS pages contained in Attachment 2 for both units.

Safety Assessment

As discussed in the PBAPS, Units 2 and 3 Updated Final Safety Analysis Report (UFSAR), Section 10.9 ("Emergency Service Water System") the safety objective of the ESW System is to provide a reliable supply of cooling water to the following heat exchangers; 1) diesel generator coolers, 2) ECCS and RCIC compartment air coolers, 3) Core Spray Pump Motor Oil Coolers, and 4) other selected equipment during a loss-of-offsite power or during a loss of normal station service water due to the design flood condition or the loss of the Conowingo Pond. During normal plant operating conditions, the service water system provides the cooling water supply to the ESW-cooled equipment, except for the diesel generator coolers.

In response to the design basis accident loss-of-coolant accident (DBA LOCA), each of the two, 100% capacity ESW pumps is designed to provide cooling water to the diesel generator coolers, and to the heat exchangers for the unit with the LOCA, as well as to provide cooling water to the heat exchangers of the other unit that needs to be shut down. (A loss-of-offsite power (LOOP) condition is imposed on both units as an accident condition.) With one ESW subsystem inoperable, the remaining operable ESW subsystem is adequate to perform this design basis heat removal function. However, the overall reliability is reduced because a single failure in the operable ESW subsystem could result in loss of ESW function.

Without the proposed additional seven (7) days, in the event that the removal of the ESW pump does exceed the seven (7) day Completion Time, both units (Peach Bottom Atomic Power Station, Units 2 and 3) would be required to shut down. The probability of losing offsite power is the same with the units on-line or off-line. Therefore, placing the plant through a transient to a shutdown condition (which itself can induce a plant problem) does not change the probability of requiring the other subsystem and does not increase safety. To the contrary, shutting down both units may potentially cause grid instabilities which leads to a higher likelihood of a loss-of-offsite power. Shutting down both units does not preclude the need for ESW. Even when shutdown, if a loss-of-offsite power occurred, ESW would be required to cool the diesel generators in support of shutdown cooling to remove reactor core decay heat. Performing this pump change-out during a planned reactor outage (September 2000) has no increased safety benefit since multiple safety systems would be out of service for maintenance activities, and the likelihood of severe weather, which increases the likelihood that off-site power could be lost, is higher in the late Summer/early Fall months as compared to Spring.

The risk associated with the removal of the "B" ESW pump for 14 days was evaluated using the 1999 updated PBAPS, Units 2 and 3 Probabilistic Safety Assessment (PSA) models. The core damage frequency (CDF) increase was calculated to be a factor of 1.33 and 1.16 for PBAPS, Units 2 and Unit 3, respectively. This increase is measured from the CDF representing the risk when no equipment is removed from service (zero maintenance state). The small calculated increase in CDF reflects the remaining capacity, redundancy, and diversity of the other ESW and Emergency Cooling Water (ECW) pumps. (See the discussion below for details regarding the design capabilities of the ECW pump.) The small CDF increase also reflects the fact that only one of the ESW/ECW systems is needed for the cooling of the

diesel generators and ECCS pumps during a loss-of-offsite power.

Comparison to the risk criteria provided in Regulatory Guide 1.174 ("An Approach For Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-Specific Changes To The Current Licensing Basis") and Regulatory Guide 1.177 ("An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications") was performed to benchmark the significance of the temporary ESW pump maintenance configuration. This comparison reveals that the change in calculated CDF over the 14 day outage time represents a small fraction of the risk considered as the threshold for risk significance. The calculated core damage probability (CDP), the CDF increase multiplied by the fraction of the year this configuration will exist (14 days), is only 7% of the 5E-7 CDP risk significance threshold cited in RG 1.177 for Unit 2, and 3% for Unit 3 for single allowed out-of-service time Technical Specification changes. These small fractions demonstrate that the risk incurred during the "B" ESW pump outage is not significant. Even though no maintenance is planned on equipment which provides the subject function, if this equipment becomes inoperable or if any unexpected entries into Technical Specification Actions occur, an evaluation will be performed, in accordance with Station procedures, to ensure that the risk will not exceed the criteria provided in Regulatory Guide 1.177.

As mentioned above, the 100% capacity Emergency Cooling Water (ECW) pump will function as an additional barrier along with the remaining ESW subsystem. However, this additional barrier is not required to ensure the CDP remains below the risk significance threshold cited in RG 1.177. The calculated CDP representing simultaneous "B" ESW pump and the ECW pump outages is 69% of the 5E-7 threshold for PBAPS, Unit 2, and 61% for PBAPS, Unit 3. Just as with the ESW pumps, this pump is automatically initiated to provide the necessary cooling water. Plant procedures are then used to secure unneeded equipment and to properly operate the cooling water pumps which are required. The suction source for the ESW pumps is known as the emergency pump structure, which communicates directly with the Conowingo Pond. The ECW pump suction source is the Emergency Cooling Tower basin, which would be refilled as necessary, by procedure, by the High Pressure Service Water system. The ECW pump is capable of providing the heat removal function that ESW normally provides for both units. However, the ECW pump is not safety-related and is not normally credited for use during a design basis accident. The ECW pump was downgraded from safety-related status to augmented status in 1994. The augmented function of the ECW pump is for loss of the ultimate heat sink (i.e., Conowingo Pond) which can occur during the non-design basis accident events of flooding or loss of the Conowingo Pond. The ECW pump is tested and its performance is monitored as part of the Inservice Testing Program. The ECW pump was most recently tested in January 2000 and its performance was satisfactory. As previously mentioned, procedures exist to utilize the ECW pump as a backup to the operation of the ESW system, and prevent the misoperation of the system through human error. The ECW pump is seismically qualified and is powered from a safety-related power source. The safety-related power source used to power the ECW pump is different than the safety-related power source used to power the remaining ESW subsystem.

During the replacement of the "B" ESW pump, appropriate actions will be in place to ensure that no planned activities will effect the operability of the remaining ESW subsystem including all support systems associated with the remaining ESW pump, and the ECW pump.

Information Supporting a Finding of No Significant Hazards Consideration

It is concluded that the proposed changes to the PBAPS, Units 2 and 3 TS do not involve a Significant Hazards Consideration. In support of this determination, an evaluation of each of the three (3) standards set forth in 10 CFR 50.92 is provided below.

1. The proposed TS changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

This change adds a note to the Completion Time of Condition A for Technical Specification 3.7.2 ("Emergency Service Water (ESW) System and Normal Heat Sink"). This note extends the completion time for the Condition of one Emergency Service Water (ESW) subsystem inoperable from 7 to 14 days. This note, which will expire on May 31, 2000, allows the replacement of the ESW pump currently scheduled to occur in May 2000. The ESW system is not an input into the probability of occurrence of any of the accidents previously evaluated in the SAR. Since accident initiation is not dependent on the operability of either ESW subsystem, changing the maximum allowable time which an ESW subsystem can be inoperable does not involve a significant increase in the probability of an accident previously evaluated.

The ESW system is used to mitigate the consequences of accidents as discussed in the PBAPS, Units 2 and 3, UFSAR, Section 14.6. With the "B" subsystem inoperable, the other subsystem is capable of providing the heat removal function with the "A" ESW pump. In addition, the Emergency Cooling Water pump can provide this function. However, removal of the "B" ESW pump from service would reduce system redundancy. As a result of the loss of redundancy, the Core Damage Probability (CDP) will increase slightly. A comparison to the risk criteria provided in Regulatory Guide 1.174 ("An Approach For Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-Specific Changes To The Current Licensing Basis") and Regulatory Guide 1.177 ("An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications") was performed to benchmark the significance of the temporary ESW pump maintenance configuration. This comparison reveals that the change in calculated core damage frequency (CDF) over the 14 day outage time represents a small fraction of the risk considered as the threshold for risk significance. The calculated CDP, the CDF increase multiplied by the fraction of the year this configuration will exist (14 days), is only 7% of the 5E-7 CDP risk significance threshold cited in RG 1.177 for Unit 2, and 3% for Unit 3 for single allowed out-of-service time Technical Specification changes. These small fractions demonstrate that the risk incurred during the "B" ESW pump outage is not risk significant.

The 100% capacity Emergency Cooling Water (ECW) pump will function as an additional barrier along with the remaining ESW subsystem. However, this additional barrier is not required to ensure the CDP remains below the risk significance threshold cited in RG 1.177. The ECW pump is capable of providing the heat removal function that ESW normally provides during the additional seven (7) day period which is being requested for pump maintenance activities. The ECW pump receives an automatic start signal coincident with the ESW pumps. The ECW pump is seismically qualified and is powered from a safety-related power source. The safety-related power source used to power the ECW pump is different than the safety-related power source used to power the remaining ESW subsystem. The ECW pump is not safety-related. However, during the replacement of the "B" ESW pump, appropriate actions will be in place to ensure that no planned activities will effect the operability of the remaining ESW subsystem including all support systems associated with the remaining ESW pump, and the ECW pump.

Based on the above, extending the completion time from 7 days to 14 days, when one ESW subsystem is inoperable, does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed TS changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The ESW system is not an accident initiator, nor is any new failure mode introduced by an extension of the completion time from 7 days to 14 days, for the Condition of one ESW subsystem inoperable. This change only affects the single failure capability of the ESW system in that only the "A" ESW system pump will be operable. During this seven (7) day extension, the ECW pump is planned to be maintained available to serve as a backup to the "A" ESW pump. The design basis heat removal capability of this equipment is not being reduced during this seven (7) day period, since one subsystem of ESW (or the ECW pump) is capable of meeting the heat removal requirement in the unlikely possibility of the LOCA coincident with a loss-of-offsite power. Additionally, the method of operation of equipment which utilizes ESW for cooling is not being changed.

The length of time that PBAPS, Unit 2 and 3 can operate in Modes 1, 2 and 3 with one ESW subsystem inoperable, does not create a different type accident than any previously evaluated. Changing the length of time with one ESW subsystem inoperable does not create any new failure modes or change any evaluated failure modes. Therefore, the proposed TS changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed TS changes do not involve a significant reduction in a margin of safety.

This change will not involve a significant reduction in a margin of safety. This change only affects the single failure capability of the ESW system in that only the "A" ESW system pump will be operable. The design basis heat removal capability of this equipment is not being reduced during this seven (7) day period, since one subsystem

of ESW (or the ECW pump) is capable of meeting the heat removal requirement in the unlikely possibility of the LOCA coincident with a loss-of-offsite power. Additionally, the method of operation of equipment which utilize ESW for cooling is not being changed.

With adequate heat removal capability, the equipment necessary to function following a design basis accident will be able to perform their required mitigating functions. Therefore, this change does not involve a significant reduction in a margin of safety.

As a result of the loss of redundancy, the Core Damage Probability (CDP) does increase slightly. The calculated CDP, the CDF increase multiplied by the fraction of the year this configuration will exist (14 days), is only 7% of the 5E-7 CDP risk significance threshold cited in RG 1.177 for Unit 2, and 3% for Unit 3. These small fractions demonstrate that the risk incurred during the "B" ESW pump outage is not significant.

Information Supporting an Environmental Assessment

An environmental assessment is not required for the proposed changes since the proposed changes conform to the criteria for "actions eligible for categorical exclusion" as specified in 10 CFR 51.22(c)(9). The proposed changes will have no impact on the environment. The proposed changes do not involve a significant hazards consideration as discussed in the preceding section. The proposed changes do not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. In addition, the proposed changes do not involve a significant increase in individual or cumulative occupational radiation exposure.

Conclusion

We have concluded that the proposed changes to the PBAPS, Units 2 and 3 TS do not involve a Significant Hazards Consideration.

ATTACHMENT 2

**PEACH BOTTOM ATOMIC POWER STATION
UNITS 2 AND 3**

**Docket Nos. 50-277
50-278**

**License Nos. DPR-44
DPR-56**

TECHNICAL SPECIFICATIONS CHANGES

Attached Pages

Units 2 and 3

**3.7-3
Bases 3.7-8**

3.7 PLANT SYSTEMS

3.7.2 Emergency Service Water (ESW) System and Normal Heat Sink

LCO 3.7.2 Two ESW subsystems and normal heat sink shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ESW subsystem inoperable.	A.1 Restore ESW subsystem to OPERABLE status.	7 days *
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Both ESW subsystems inoperable. <u>OR</u> Normal heat sink inoperable.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours 36 hours

* The Completion Time to this Action is temporarily extended to 14 days. This note will expire May 31, 2000.

BASES

APPLICABILITY
(continued)

In MODES 4 and 5, the OPERABILITY requirements of the ESW System and normal heat sink are determined by the systems they support, and therefore the requirements are not the same for all facets of operation in MODES 4 and 5. Thus, the LCOs of the systems supported by the ESW System and normal heat sink will govern ESW System and normal heat sink OPERABILITY requirements in MODES 4 and 5.

ACTIONS

A.1

With one ESW subsystem inoperable, the ESW subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE ESW subsystem is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE ESW subsystem could result in loss of ESW function.

The 7 day Completion Time is based on the redundant ESW System capabilities afforded by the OPERABLE subsystem, the low probability of an event occurring during this time period, and is consistent with the allowed Completion Time for restoring an inoperable DG. *

B.1 and B.2

If the ESW System cannot be restored to OPERABLE status within the associated Completion Time, or both ESW subsystems are inoperable, or the normal heat sink is inoperable, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.7.2.1

This SR verifies the water level in the pump bay of the pump structure to be sufficient for the proper operation of the ESW pumps (the pump's ability to meet the minimum flow rate and anticipatory actions required for flood conditions are

(continued)

* The Completion time to this Action is temporarily extended to 14 days. The additional 7 days is based on probabilistic risk assessment study. This note will expire May 31, 2000.

3.7 PLANT SYSTEMS

3.7.2 Emergency Service Water (ESW) System and Normal Heat Sink

LCO 3.7.2 Two ESW subsystems and normal heat sink shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ESW subsystem inoperable.	A.1 Restore ESW subsystem to OPERABLE status.	7 days *
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Both ESW subsystems inoperable. <u>OR</u> Normal heat sink inoperable.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours 36 hours

* The Completion Time to this Action is temporarily extended to 14 days. This note will expire May 31, 2000.

BASES

APPLICABILITY
(continued)

In MODES 4 and 5, the OPERABILITY requirements of the ESW System and normal heat sink are determined by the systems they support, and therefore the requirements are not the same for all facets of operation in MODES 4 and 5. Thus, the LCOs of the systems supported by the ESW System and normal heat sink will govern ESW System and normal heat sink OPERABILITY requirements in MODES 4 and 5.

ACTIONS

A.1

With one ESW subsystem inoperable, the ESW subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE ESW subsystem is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE ESW subsystem could result in loss of ESW function.

The 7 day Completion Time is based on the redundant ESW System capabilities afforded by the OPERABLE subsystem, the low probability of an event occurring during this time period, and is consistent with the allowed Completion Time for restoring an inoperable DG. *

B.1 and B.2

If the ESW System cannot be restored to OPERABLE status within the associated Completion Time, or both ESW subsystems are inoperable, or the normal heat sink is inoperable, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.7.2.1

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