

ATTACHMENT 1

PEACH BOTTOM ATOMIC POWER STATION
UNITS 2 AND 3

Docket Nos. 50-277
50-278

License Nos. DPR-44
DPR-56

TECHNICAL SPECIFICATIONS CHANGE REQUEST
93-23

"Eliminate Unnecessary Diesel Generator Testing"

Supporting Information for Changes - 5 Pages

Philadelphia Electric Company (PECo), Licensee under Facility Operating Licenses DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station (PBAPS) Unit No. 2 and Unit No. 3, respectively, requests that the Technical Specifications (TS) be amended as proposed below to eliminate unnecessary diesel generator testing when a diesel generator or an offsite power source becomes inoperable. The proposed change will increase diesel generator reliability by reducing the stresses on the diesel generators caused by unnecessary testing. This increased diesel reliability will result in an overall increase in plant safety. The proposed change to Surveillance Requirements for TS Section 4.9.B is compatible with PBAPS operating experience and is consistent with the intent of the corresponding recommendation in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," guidance in Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," and the format of the Peach Bottom Technical Specifications.

This TS Change Request for PBAPS, Units 2 and 3, provides a discussion and description of the proposed change, a safety assessment, information supporting a finding of No Significant Hazards Consideration, and information supporting an Environmental Assessment.

The proposed revised TS pages for PBAPS Units 2 and 3 are provided in Attachment 2. Proposed changes are indicated by vertical bars in the margin of pages 219, 220, and 220a.

We request that, if approved, the TS changes be effective upon issuance.

Discussion and Description of the Proposed Changes

1. Delete the requirement in TS Section 4.9.B.1 to demonstrate operability of the diesel generators when an offsite power source is determined to be inoperable.
2. Revise the requirement in TS Section 4.9.B.3 and Section 4.9.B.4 to require that station personnel either determine that remaining operable diesel generators are not inoperable due to common cause failure or perform Surveillance Requirement 4.9.A.1.2.a.3 when one diesel generator is determined to be inoperable. This change would allow station personnel to determine whether the potential for a common cause failure exists rather than require unnecessary testing of the operable diesel generators.

These proposed changes are consistent with the corresponding requirements in the Improved Standard TS, NUREG-1433, "General Electric Plants, BWR/4."

Safety Assessment

The PBAPS AC power system consists of two independent offsite power sources and an onsite power source consisting of four Emergency Diesel Generators (EDGs).

This design provides independent and redundant AC sources which ensure power to the emergency systems assumed to be available in the Safety Analysis Report (SAR).

The following list identifies features of the design which are relevant to this safety assessment:

1. Each reactor unit has four independent 4kV emergency switchgear busses each of which is energized from one of the two offsite AC sources at all times during normal operation. Upon loss of either offsite AC source, power to the 4kV emergency busses automatically transfers to the second offsite source. If neither offsite source is available, each 4kV emergency switchgear bus is supplied from an associated EDG. The design basis accident scenario assumes that three of the four 4kV emergency busses will remain energized throughout the design basis event.
2. There are four EDGs which support the operation of both reactor units. Each EDG supplies two 4kV emergency busses; one associated with PBAPS Unit 2 and one associated with PBAPS Unit 3. Therefore, all four EDGs are required when either or both PBAPS Unit 2 and Unit 3 are operating.
3. The four EDGs are sufficient to provide power for the functioning of required safeguard systems for mitigating a Loss-of-Coolant Accident on one reactor unit and the shutting down of the other unit, assuming the failure of one EDG and loss of all offsite power sources.
4. The design of the EDGs and the associated electrical distribution systems provides the capacity to test each EDG unit independently of redundant EDGs.

TS Surveillance Requirement (SR) 4.9.B.1 requires that the operable EDGs be started to demonstrate operability in the event one offsite power source becomes inoperable. SR 4.9.B.3 requires that the operable EDGs be started to demonstrate operability in the event one EDG becomes inoperable due to any reason other than preplanned preventive maintenance, or testing. SR 4.9.B.4 requires that the operable EDGs be started to demonstrate operability in the event one EDG and one offsite power source become inoperable. The intent of this additional testing is, in part, to determine if a common cause failure exists and, in part, to provide added assurance that the remaining operable EDGs are capable of supplying emergency power. However, this requirement can result in unnecessary testing of otherwise operable EDGs when a different EDG is declared inoperable and the cause does not impact the operable EDGs (i.e., no common cause failure exists). Inoperability of one offsite power source in no way affects the reliability of the operable EDGs.

PECo proposes to change SRs 4.9.B.1, 4.9.B.3, and 4.9.B.4 to allow verification that the cause of the EDG being inoperable does not impact the operability of the operable EDGs. This change would allow station personnel to determine whether the potential for a common cause failure exists rather than require unnecessary testing of the operable EDGs.

The normal TS surveillance testing schedule established in accordance with Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," demonstrates acceptable reliability and assures that the operable EDGs are capable of performing their intended safety function. Further, Generic Letter 84-15 encouraged licensees to delete testing of EDGs as a result of other systems or components (e.g., offsite power source) becoming inoperable. A failure of a different EDG does not reduce the reliability of the operable AC sources as demonstrated by previous TS surveillance testing, provided the potential for a common cause failure has been examined and dismissed. Once the potential for a common cause failure has been examined and dismissed, testing beyond the normal surveillance schedule is excessive and does not contribute to improved EDG reliability. Industry and NRC studies (e.g., NUREG/CR-4810) have shown that excessive testing of EDGs can cause reduced reliability.

In addition, Regulatory Guide (RG) 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977, defines the diesel generator unit as consisting of the engine, generator, combustion air system, cooling water system up to the supply, fuel supply system, lubricating oil system, starting energy sources, autostart controls, manual controls, and diesel generator breaker. Inoperabilities of EDGs caused by failures that are categorized as invalid failures (failures that would not have prevented the EDG from performing its intended safety function in an emergency) in accordance with RG 1.108, Revision 1, August 1977, (e.g., failure of equipment not part of the defined diesel generator unit) do not impact the surveillance frequency of the EDG that failed. Likewise, there should be no reason to perform additional testing of operable EDGs to determine if the same invalid failure mode exists. Subjecting operable EDGs to increased testing should not be required when one EDG is declared inoperable because of a component which can be tested independently to restore the inoperable EDG to operable status.

The proposed TS change will preclude unnecessary testing of operable EDGs and therefore increase overall plant safety by increasing EDG reliability. Testing beyond the normal SR is not warranted unless a potential common cause failure exists. While testing of an operable EDG reduces its probability of failure due to an undetected condition, it adds an additional demand on the EDG. In conclusion, allowing station personnel to verify that the cause of one EDG being inoperable does not impact the operability of the remaining operable EDGs will preclude unnecessary testing of the operable EDGs and improve EDG reliability.

Information Supporting a Finding of No Significant Hazards Consideration

The change proposed in this Application does not constitute a Significant Hazards Consideration in that:

- i) The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated because implementation of the proposed TS change, which would delete the requirement to demonstrate the operability of an otherwise operable EDG once the potential for a common cause failure has been dismissed, does not affect the design or performance characteristics of an EDG. Similarly, deleting the requirement to demonstrate the operability of EDGs when an offsite power source is inoperable does not affect the design or performance characteristics of an EDG. Therefore, the EDGs will maintain their ability to perform their design function.

The EDGs are not assumed to be an initiator of any analyzed event. The role of the EDGs is in the mitigation of accident consequences. Therefore, this proposed TS change does not increase the probability of an accident previously evaluated.

The consequences of an accident previously evaluated could be affected by the proposed TS change. As described above, implementation of the proposed change will result in the EDGs maintaining their ability to perform their design function. Excessive testing of EDGs can cause reduced reliability. Precluding unnecessary testing of operable EDGs will improve EDG reliability and thereby have an overall positive affect on plant safety. Therefore, this proposed TS change does not increase the consequences of an accident previously evaluated.

- ii) The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated because implementation of the proposed TS change will not involve physical changes to plant systems, structures, or components (SSC). The design or performance characteristics of the EDG will not be affected by the proposed change. The proposed change does not introduce any new modes of plant operation or make any changes to system setpoints which would initiate a new or different kind of accident. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

- iii) The proposed change does not involve a significant reduction in a margin of safety because implementation of the proposed TS change does not affect the design or performance of any EDG. The change will increase EDG reliability by reducing the stresses on the EDG from unnecessary testing. This will result in an overall increase in plant safety. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Information Supporting an Environmental Assessment

An environmental impact assessment is not required for the change proposed by this Application because the change conforms to the criteria for "actions eligible for categorical exclusion," as specified in 10CFR51.22(c)(9). The requested change will have no impact on the environment. The proposed change does not involve a Significant Hazards Consideration as discussed in the preceding section. The proposed change does not involve a significant change in the type or significant increase in the amounts of any effluent that may be released offsite. The proposed change would not authorize any change in the authorized power level of the facility. In addition, the proposed change does not involve a significant increase in individual or cumulative occupation radiation exposure.

Conclusion

The Plant Operations Review Committee and the Nuclear Review Board have reviewed the proposed change to the TS and have concluded that the change does not involve an unreviewed safety question and will not endanger the public health and safety.

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
93-23

List of Attached Pages

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LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE REQUIREMENTS3.9.B Operation with Inoperable Equipment

Whenever the reactor is in Run Mode or Startup Mode with the reactor not in a Cold Condition, the availability of electric power shall be as specified in 3.9.A, except as follows:

1. With one offsite circuit required by Specification 3.9.A.1 inoperable, restore at least two offsite circuits to OPERABLE status within 7 days or be in least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
2. With two independent off-site circuits required by Specification 3.9.A.1 inoperable, continued operation is permissible, provided the four diesel generators and associated emergency busses are operable, all core and containment cooling systems are operable and reactor power level is reduced to 25% of the design.

4.9.B. Operation with Inoperable Equipment

1. When it is determined that one offsite circuit required by Specification 3.9.A.1 is inoperable, verify the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.9.A.1.1.a within 1 hour and once per 8 hours thereafter.
2. None

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LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.9.B (Continued)

3. With one diesel generator inoperable restore the inoperable diesel generator and associated emergency bus to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

3. When it is determined that one diesel generator is inoperable, verify the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.9.A.1.1.a within 1 hour and once per 8 hours thereafter. Verify within 2 hours that required systems, subsystems, trains, components, and devices that depend on the remaining diesel generators as a source of emergency power are OPERABLE.

If the diesel generator became inoperable for any reason other than preplanned preventative maintenance, or testing, either determine within 24 hours that remaining operable diesel generators are not inoperable due to common cause failure or demonstrate the OPERABILITY of the remaining operable diesel generators by performing Surveillance Requirement 4.9.A.1.2.a.3 for one diesel at a time, within 24 hours* and at least once per 72 hours thereafter.

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY for failures that are potentially generic to the remaining diesel generators and for which appropriate alternative testing cannot be designed.

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LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.9.B (Continued)

4. With one diesel generator and one offsite circuit required by Specification 3.9.A.1 inoperable, restore at least two offsite circuits or four diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

4. When it is determined that one diesel generator and one offsite circuit required by Specification 3.9.A.1 are inoperable, verify the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.9.A.1.1.a within 1 hour and once per 8 hours thereafter. Verify within 2 hours, that required systems, subsystems, trains, components, and devices that depend on the remaining diesel generators as a source of emergency power are OPERABLE.

If the diesel generator became inoperable for any reason other than preplanned preventative maintenance, or testing, either determine within 24 hours that remaining operable diesel generators are not inoperable due to common cause failure or demonstrate the OPERABILITY of the remaining diesel generators by performing Surveillance Requirement 4.9.A.1.2.a.3 for one diesel generator at a time, within 8 hours*.

5. From and after the date that one of the 125 volt battery systems is made or found to be inoperable for any reason, continued reactor operation is permissible during the succeeding three days within electrical safety considerations, provided repair work is initiated in the most expeditious manner to return the failed component to an operable state, and Specifications 3.5.F and 3.9.B.3 are satisfied.

5. None

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY for failures that are potentially generic to the remaining diesel generators and for which appropriate alternative testing cannot be designed.

LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE REQUIREMENTS3.9.B Operation with Inoperable Equipment

Whenever the reactor is in Run Mode or Startup Mode with the reactor not in a Cold Condition, the availability of electric power shall be as specified in 3.9.A, except as follows:

1. With one offsite circuit required by Specification 3.9.A.1 inoperable, restore at least two offsite circuits to OPERABLE status within 7 days or be in least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
2. With two independent off-site circuits required by Specification 3.9.A.1 inoperable, continued operation is permissible, provided the four diesel generators and associated emergency busses are operable, all core and containment cooling systems are operable and reactor power level is reduced to 25% of the design.

4.9.B. Operation with Inoperable Equipment

1. When it is determined that one offsite circuit required by Specification 3.9.A.1 is inoperable, verify the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.9.A.1.1.a within 1 hour and once per 8 hours thereafter.
2. None

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LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.9.B (Continued)

3. With one diesel generator inoperable restore the inoperable diesel generator and associated emergency bus to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

3. When it is determined that one diesel generator is inoperable, verify the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.9.A.1.1.a within 1 hour and once per 8 hours thereafter. Verify within 2 hours that required systems, subsystems, trains, components, and devices that depend on the remaining diesel generators as a source of emergency power are OPERABLE.

If the diesel generator became inoperable for any reason other than preplanned preventative maintenance, or testing, either determine within 24 hours that remaining operable diesel generators are not inoperable due to common cause failure or demonstrate the OPERABILITY of the remaining operable diesel generators by performing Surveillance Requirement 4.9.A.1.2.a.3 for one diesel at a time, within 24 hours* and at least once per 72 hours thereafter.

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY for failures that are potentially generic to the remaining diesel generators and for which appropriate alternative testing cannot be designed.

PBAPS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.9.B (Continued)

4. With one diesel generator and one offsite circuit required by Specification 3.9.A.1 inoperable, restore at least two offsite circuits or four diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

4. When it is determined that one diesel generator and one offsite circuit required by Specification 3.9.A.1 are inoperable, verify the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.9.A.1.1.a within 1 hour and once per 8 hours thereafter. Verify within 2 hours, that required systems, subsystems, trains, components, and devices that depend on the remaining diesel generators as a source of emergency power are OPERABLE.

If the diesel generator became inoperable for any reason other than preplanned preventative maintenance, or testing, either determine within 24 hours that remaining operable diesel generators are not inoperable due to common cause failure or demonstrate the OPERABILITY of the remaining diesel generators by performing Surveillance Requirement 4.9.A.1.2.a.3 for one diesel generator at a time, within 8 hours*.

5. From and after the date that one of the 125 volt battery systems is made or found to be inoperable for any reason, continued reactor operation is permissible during the succeeding three days within electrical safety considerations, provided repair work is initiated in the most expeditious manner to return the failed component to an operable state, and Specifications 3.5.F and 3.9.B.3 are satisfied.

5. None

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY for failures that are potentially generic to the remaining diesel generators and for which appropriate alternative testing cannot be designed.