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LRN-01-0200
LCR S01-02

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS
3.0.5 and 3.8.1 – NORMAL AND EMERGENCY POWER
SALEM GENERATING STATION UNIT NOS. 1 AND 2
DOCKET NOS. 50-272 AND 50-311
FACILITY OPERATING LICENSE NO. DPR-70 AND DPR-75**

In accordance with the requirements of 10 CFR 50.90, PSEG Nuclear, LLC (PSEG) hereby transmits a request for revision of the Technical Specifications and supporting Bases for Salem Generating Station Unit Nos. 1 and 2, respectively. Pursuant to the requirements of 10 CFR 50.91(b)(1), a copy of this request for amendment has been sent to the State of New Jersey.

The proposed changes contained herein modify the provisions under which equipment may be considered operable when either its normal or emergency power source is inoperable. Technical Specification 3.0.5 will be deleted under this proposal, and appropriate conditions incorporated into electrical power systems TS 3.8.1.1, A.C. Sources – Operating.

These proposed changes are consistent with the recommendations contained in NUREG-1431, Rev. 2, "Standard Technical Specifications for Westinghouse Plants."

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1), using the criteria in 10 CFR 50.92(c), and it has been determined that this request involves no significant hazards considerations.

PSEG has reviewed the proposed License Change Request (LCR) against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor significantly increase

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individual or cumulative occupational radiation exposures. Based on the foregoing, PSEG concludes that the proposed change meets the criteria

delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

A description of the requested amendment, the reason for the changes, and the justification for the changes are provided in Attachment 1. The basis for no significant hazards consideration determination are provided in Attachment 2. The marked up Technical Specification pages and Bases affected by the proposed changes are provided in Attachment 3.

Should you have any questions regarding this request, please contact C. Berger at (856) 339-1432.

Sincerely,



D. F. Garchow
Vice President - Operations

Affidavit
Attachments (3)

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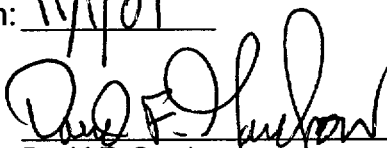
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AFFIDAVIT

REF: LRN-01-0200
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I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 11/1/01

Signature: 
David F. Garchow
Vice President – Operations
PSEG Nuclear, LLC

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DESCRIPTION OF THE PROPOSED CHANGE

PSEG proposes to delete the current Salem Technical Specification (TS) 3.0.5, Limiting Condition For Operation, and modify TS 3.8.1.1, Electrical Power Systems – A.C. Sources – Operating, as indicated below. The corresponding Bases will be modified accordingly, and are included as Attachment 3. Added phrases are shown in bold and underlined and those phrases being deleted are shown with a line through them.

Proposed Changes to TS 3.0.5

Specification 3.0.5 Deleted

Proposed Changes to TS 3.8.1.1

- a. With an independent A.C. circuit of the above required A.C. electrical power sources inoperable:
 1. Demonstrate the OPERABILITY of the remaining independent A.C. circuit by performing Surveillance Requirement 4.8.1.1.a within one hour and at least once per 8 hours thereafter; and
 2. Within 24 hours, declare required systems or components with no offsite power available inoperable when a redundant required system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
 3. Restore the inoperable independent A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of the above required A.C. electrical power sources inoperable:
 1. Demonstrate the OPERABILITY of the independent A.C. circuits by performing Surveillance Requirement 4.8.1.1.a within 1 hour and at least once per 8 hours thereafter; and

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2. Within 4 hours, declare required systems or components supported by the inoperable diesel generator inoperable when a required redundant system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and

3. Determine the two remaining OPERABLE diesel generators are not inoperable due to common cause failure or perform Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours. If the diesel generator is inoperable for preventive maintenance, the two remaining OPERABLE diesel generators need not be tested nor the OPERABILITY evaluated; and

4. In any case, restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With two of the above required independent A.C. circuits inoperable:

1. Demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within 8 hours, unless the diesel generators are already operating; and

2. Within 12 hours, declare required systems or components supported by the inoperable offsite circuits inoperable when a required redundant system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and

3. Restore at least one of the inoperable independent A.C. circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours; and

4. With only one of the independent A.C. circuits OPERABLE, restore the other independent A.C. circuit to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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REASON FOR THE PROPOSED CHANGES

Technical Specification (TS) 3.0.5 delineates what additional conditions must be satisfied to permit plant operation to continue when an individual system or equipment would otherwise be considered inoperable because its normal or emergency power source is not operable. The specification permits continued operation provided that no portion of the redundant system in another division is inoperable for any reason. The provisions of this specification permit the action statements associated with individual systems, subsystem, trains, components or devices to be consistent with the action statements of the associated electrical power source. It is intended to allow operation to be governed by the time limits of the action statement associated with the Limiting Condition for Operation (LCO) of the normal or emergency power source, rather than the corresponding action statement for each affected system or component. The initial timeframe for determining that the conditions of TS 3.0.5 are satisfied is 2 hours, otherwise shutdown to hot standby must commence within 6 hours.

The proposed deletion of TS 3.0.5 and revision to TS 3.8.1.1 extends the allowable action time for complying with the specified conditions beyond the current 2 hours for the following initiating events: a single emergency diesel generator (DG) inoperable; a single inoperable offsite power circuit; and two inoperable offsite power circuits.

The proposed changes correspond with Westinghouse Standard Technical Specifications, NUREG-1431. Standard TS initiate action (within 4, 24 or 12 hours, respectively, for loss of a single diesel generator, a single offsite circuit or two offsite circuits) upon discovery of no offsite power or diesel inoperability concurrent with inoperability of the required redundant systems or components. Further, the action required by Standard TS is to declare the required systems or components with no normal or emergency power available inoperable, when a redundant system or component is also inoperable.

JUSTIFICATION FOR THE PROPOSED CHANGES

The proposed changes will avoid invoking overly restrictive actions that could entail shutting down the plant. Under the present TS requirements, operators have two hours following inoperability of a normal or emergency power source to verify that systems and equipment supported by that power supply are operable, along with their redundant systems and equipment. Should these conditions not be satisfied, the plant must be placed in hot standby within the next 6 hours, hot shutdown in the following 6 hours and cold shutdown in the next 24 hours.

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This is more restrictive than the stated purpose of the TS, which is to allow the associated electrical system's actions to govern required timeframes. For the three combinations of inoperable power sources described above, there is no situation which mandates a plant shutdown to begin as early as two hours from the initial occurrence. Thus, the existing requirements place an undue burden on plant operators and subjects the plant to a transient associated with shutdown, with no corresponding increase in safety.

Standard TS provide significantly greater flexibility in completing the required actions. Operators have up to 24 hours from discovery of no offsite power to one train, concurrent with inoperability of redundant required systems or components, to declare the supported equipment inoperable. For loss of power from two offsite circuits, that time is reduced to 12 hours, and to 4 hours for loss of emergency power from a diesel generator. Declaring the supported equipment inoperable initiates a new Action under the LCO for that equipment, during which time operators have additional opportunity to restore the affected equipment to operable status before commencing a plant shutdown. This is intended to allow the operator adequate time for evaluation and repair. Further, standard TS specifically allows an exception to the normal time for initiating the allowed outage time clock. Completion time only begins upon discovery of no normal or emergency power to a train, concurrent with a required system or component on the other train becoming inoperable.

CONCLUSIONS

The proposed changes to Technical Specifications and the Bases will have no adverse effect on plant operations or accident mitigation equipment. Therefore, there is no adverse impact on public health and safety.

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**DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION
10 CFR 50.92 EVALUATION**

Pursuant to 10 CFR 50.92, PSEG Nuclear, LLC (PSEG) reviewed the proposed revision to determine whether the request involves a significant hazards consideration. PSEG has concluded that operation of Salem Generating Station, Unit Nos. 1 and 2, in accordance with the proposed changes does not involve a significant hazards consideration.

Requested Change

PSEG proposes to delete the current Salem Technical Specification (TS) 3.0.5, Limiting Condition For Operation, and modify portions of TS 3.8.1.1, Electrical Power Systems – A.C. Sources – Operating, as summarized below. The corresponding Bases will be modified accordingly.

3.8.1.1.a. With one required independent A.C. circuit inoperable:

Within 24 hours, declare required systems or components with no offsite power available inoperable when a redundant required system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours

3.8.1.1.b. With one required diesel generator inoperable:

Within 4 hours, declare required systems or components supported by the inoperable diesel generator inoperable when a required redundant system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and

3.8.1.1.d. With two required independent A.C. circuits inoperable:

Within 12 hours, declare required systems or components supported by the inoperable offsite circuits inoperable when a required redundant system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and

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BASIS

PSEG Nuclear, LLC has reviewed the proposed changes and concluded that they do not involve a significant hazards consideration. In support of this conclusion, each of the three criteria set forth in 10 CFR 50.92(c) are evaluated below. The proposed changes do not involve a significant hazards consideration because they would not:

1. ***Involve a significant increase in the probability or consequences of an accident previously evaluated.***

The design of the AC electrical power system ensures that sufficient power will be available for engineered safeguards equipment required for safe shutdown of the facility and mitigation of accident conditions. Initial conditions of design basis accidents and transients in the Accident Analysis assume required engineered safeguards systems are operable and will function in order to maintain plant response within design limits. The proposed changes to action times do not affect the probability that any accident will occur. Since the minimum configuration of equipment assumed in the Accident Analysis will remain available, there will similarly be no increase in consequences of any accident.

The proposed changes to action times are consistent with the Westinghouse Standard Technical Specification (STS) requirements. This specification is intended to provide assurance that an event coincident with a failure of the associated normal or emergency power supply will not result in complete loss of safety function of critical required systems. The completion time allows the operator time to evaluate and repair any discovered inoperability. The given time periods are considered acceptable because they minimize risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. These completion times take into account the capacity and capability of the remaining AC sources, a reasonable time for repairs and the low probability of a design basis accident occurring during this period.

With failure of one offsite power source, the remaining operable offsite circuit and diesel generators (DG) are adequate to supply electrical power to the onsite Class 1E electrical distribution system. At least one complete train of equipment will continue to operate in the same manner as assumed in the analyses to mitigate a design basis accident, given a failure of one component in a redundant train.

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With both required offsite circuits inoperable, onsite emergency AC sources remain available to maintain the unit in a safe shutdown condition in the event of a design basis accident (DBA) or transient. The action completion time is reduced to 12 hours in this case. At least one complete train of equipment will operate as assumed in the analyses to mitigate a design basis accident, given a failure of one component in a redundant train.

With a single emergency diesel generator inoperable, the remaining operable DG and offsite power circuits are adequate to supply power to the onsite Class 1E electrical distribution system. Required actions ensure that a loss of offsite power during this period does not result in a complete loss of safety functions. Four hours is considered an acceptable time period to minimize risk during this condition, while allowing reasonable time for repair.

In any of these scenarios at least one train of equipment will be available to mitigate an accident and bring the plant to a safe shutdown condition, as assumed in the Accident Analysis. There will be no impact to radiological dose consequences.

Therefore, there will be no significant increase in the probability or consequences of an accident previously evaluated.

2. *Create the possibility of a new or different kind of accident from any accident previously analyzed.*

Expanding the allowable out of service time consistent with requirements of Standard Technical Specifications does not introduce any new or different failure from any previously evaluated or change the manner in which safety systems are operated. The associated system and equipment configurations are no different from those previously evaluated. The change in allowable action times have been considered and determined to be acceptable, without causing additional risk. The conditions of TS 3.8.1 continue to ensure that an event coincident with a failure of the associated normal or emergency power supply will not result in complete loss of safety function of critical required systems.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.

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3. *Involve a significant reduction in a margin of safety.*

The power sources and distribution systems are designed to ensure sufficient power is available to supply safety related equipment required for safe shutdown of the facility and mitigation and control of accident conditions. Operability requirements are consistent with initial conditions assumed in the accident analysis. The proposed changes continue to provide assurance that an event coincident with failure of an associated diesel generator or offsite power circuit will not result in complete loss of safety function of critical required redundant systems or equipment.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the preceding discussion, PSEG has concluded that the proposed changes to the Technical Specifications do not involve a significant hazards consideration.

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License DPR-70 are affected by this change request:

<u>Technical Specification</u>	<u>Page</u>
3.0.5	3/4 0-2
3.8.1.1	3/4 8-1, 3/4 8-2
Bases 3.0.5	B 3/4 0-4, B 3/4 0-4a
Bases 3.8.1	B 3/4 8-1

The following Technical Specifications for Facility Operating License DPR-75 are affected by this change request:

<u>Technical Specification</u>	<u>Page</u>
3.0.5	3/4 0-2
3.8.1.1	3/4 8-1
3.8.1.1	3/4 8-2
Bases 3.0.5	B 3/4 0-4, B 3/4 0-4a
Bases 3.8.1	B 3/4 8-1

APPLICABILITY

LIMITING CONDITION FOR OPERATION

=====

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied within 2 hours, action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply, by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

This specification is not applicable in MODES 5 or 6.

3.0.6 Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent A.C. circuits between the offsite transmission network and the onsite Class 1E distribution system (vital bus system), and
- b. Three separate and independent diesel generators with:
 1. Separate day tanks containing a minimum volume of 130 gallons of fuel, and
 2. A common fuel storage system consisting of two storage tanks, each containing a minimum volume of 23,000 gallons of fuel, and two fuel transfer pumps.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With an independent A.C. circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining independent A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore the inoperable independent A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the independent A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Determine the two remaining OPERABLE diesel generators are not inoperable due to common cause failure or perform Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours. If the diesel generator is inoperable for preventive maintenance, the two remaining OPERABLE diesel generators need not be tested nor the OPERABILITY evaluated. In any case, restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

REPLACE WITH

(a) ATTACHED

REPLACE WITH

(b) ATTACHED

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- c. With one independent A.C. circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining independent A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two independent A.C. circuits and three diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two of the above required independent A.C. circuits inoperable, demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within 8 hours, unless the diesel generators are already operating; restore at least one of the inoperable independent A.C. circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one of the independent A.C. circuits OPERABLE, restore the other independent A.C. circuit to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With two or more of the above required diesel generators inoperable, demonstrate the OPERABILITY of two independent A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least two of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore three diesel generators to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- f. With one of the above required fuel transfer pumps inoperable, either restore it to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- g. With one of the above required fuel storage tanks inoperable, either restore it to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

REPLACE WITH
① ATTACHED

APPLICABILITY

LIMITING CONDITION FOR OPERATION

===== ~~DELETED~~ =====
3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied within 2 hours, action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply, by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours. and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

This specification is not applicable in MODES 5 or 6.

3.0.6 Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent A.C. circuits between the offsite transmission network and the onsite Class 1E distribution system (vital bus system), and
- b. Three separate and independent diesel generators with:
 1. Separate day tanks containing a minimum volume of 130 gallons of fuel, and
 2. A common fuel storage system consisting of two storage tanks, each containing a minimum volume of 23,000 gallons of fuel, and two fuel transfer pumps.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With an independent A.C. circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining independent A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore the inoperable independent A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

REPLACE WITH

(a) ATTACHED

- b. With one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the independent A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Determine the two remaining OPERABLE diesel generators are not inoperable due to common cause failure or perform Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours. If the diesel generator is inoperable for preventive maintenance, the two remaining OPERABLE diesel generators need not be tested nor the OPERABILITY evaluated. In any case, restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

REPLACE WITH

(b) ATTACHED

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- c. With one independent A.C. circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining independent A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two independent A.C. circuits and three diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two of the above required independent A.C. ~~circuits inoperable~~, demonstrate the OPERABILITY of three diesel ~~generators~~ by performing Surveillance Requirement 4.8.1.1.2.a.2 within 8 hours, unless the diesel generators are already operating; restore at least one of the inoperable independent A.C. ~~circuits~~ to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one of the independent A.C. ~~circuits~~ OPERABLE, restore the other independent A.C. ~~circuit~~ to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With two or more of the above required diesel generators inoperable, demonstrate the OPERABILITY of two independent A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least two of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore three diesel generators to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- f. With one of the above required fuel transfer pumps inoperable, either restore it to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- g. With one of the above required fuel storage tanks inoperable, either restore it to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

REPLACE WITH
① ATTACHED

- a. With an independent A.C. circuit of the above required A.C. electrical power sources inoperable:
 - 1. Demonstrate the OPERABILITY of the remaining independent A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and
 - 2. Within 24 hours, declare required systems or components with no offsite power available inoperable when a redundant required system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
 - 3. Restore the inoperable independent A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- b. With one diesel generator of the above required A.C. electrical power sources inoperable:
 - 1. Demonstrate the OPERABILITY of the independent A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and
 - 2. Within 4 hours, declare required systems or components supported by the inoperable diesel generator inoperable when a required redundant system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
 - 3. Determine the two remaining OPERABLE diesel generators are not inoperable due to common cause failure or perform Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours. If the diesel generator is inoperable for preventive maintenance, the two remaining OPERABLE diesel generators need not be tested nor the OPERABILITY evaluated; and
 - 4. In any case, restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- d. With two of the above required independent A.C. circuits inoperable:
1. Demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within 8 hours, unless the diesel generators are already operating; and
 2. Within 12 hours, declare required systems or components supported by the inoperable offsite circuits inoperable when a required redundant system or component is inoperable, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
 3. Restore at least one of the inoperable independent A.C. circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours; and
 4. With only one of the independent A.C. circuits OPERABLE, restore the other independent A.C. circuit to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

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For example, Specification 3.8.1.1 requires in part that three emergency diesel generators be OPERABLE. The ACTION statement provides for a 72 hour out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems subsystems, trains, components and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 3.0.5 (i.e., be capable of performing their design function and have at least one normal or one emergency power source OPERABLE). If they are not satisfied, action is required in accordance with this specification.

As a further example, Specification 3.8.1.1 requires in part that two physically independent circuits between the offsite transmission network and the onsite Class II distribution system be OPERABLE. The ACTION statement provides a 24-hour out-of-service time when both required offsite circuits are not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable normal power sources, both of the offsite circuits, would also be inoperable. This would dictate invoking the applicable ACTION statement for the inoperable normal power sources instead, provided the other specified conditions are satisfied. In this case, this would mean that for one division the emergency power source must be OPERABLE (as must be the components supplied by the emergency power source) and all redundant systems, subsystems, trains, components and devices

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in the other division must be OPERABLE, or likewise satisfy Specification 3.0.5 (i.e., be capable of performing their design functions and have an emergency power source OPERABLE). In other words, both emergency power sources must be OPERABLE and all redundant systems, subsystems, trains, components and devices in both divisions must also be OPERABLE. If these conditions are not satisfied, action is required in accordance with this specification.

In MODES 5 or 6 Specification 3.0.5 is not applicable, and thus the individual ACTION statements for each applicable Limiting Condition for Operation in these MODES must be adhered to.

Specification 3.0.6 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of testing required to restore and demonstrate:

- a. The OPERABILITY of the equipment being returned to service; or
- b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the testing required to restore and demonstrate the operability of the equipment. This Specification does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the testing required to restore and demonstrate OPERABILITY.

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of testing required to restore OPERABILITY of another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of testing required to restore and demonstrate the OPERABILITY of another channel in the same trip system.

3/4.8 ELECTRICAL POWER SYSTEMS
BASES

3/4.8.1 and 3/4.8.2 A.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility, and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10 CFR Part 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least two independent sets of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of one onsite A.C. source.

INSERT A → The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The Applicability of specifications 3.8.2.2, 3.8.2.4, and 3.8.2.6 includes the movement of irradiated fuel assemblies. This will insure adequate electrical power is available for proper operation of the fuel handling building ventilation system during movement of irradiated fuel in the spent fuel pool.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are based upon the recommendations of Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977. Regulatory Guide 1.108 criteria for determining and reporting valid tests and failures, and accelerated diesel generator testing, have been superseded by implementation of the Maintenance Rule for the diesel generators per 10CFR50.65. In addition to the Surveillance Requirements of 4.8.1.1.2, diesel preventative maintenance is performed in accordance with procedures based on manufacturer's recommendations with consideration given to operating experience.

The minimum voltage and frequency stated in the Surveillance Requirements (SR) are those necessary to ensure the Emergency Diesel Generator (EDG) can accept Design Basis Accident (DBA) loading while maintaining acceptable voltage and frequency levels. Stable operation at the nominal voltage and frequency values is also essential in establishing EDG OPERABILITY, but a time constraint is not imposed. The lack of a time constraint is based on the fact that a typical EDG will experience a period of voltage and frequency

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3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

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The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

For example, Specification 3.8.1.1 requires in part that three emergency diesel generators be OPERABLE. The ACTION statement provides for a 72 hour out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 3.0.5 (i.e., be capable of performing their design function and have at least one normal or one emergency power source OPERABLE). If they are not satisfied, action is required in accordance with this specification.

As a further example, Specification 3.8.1.1 requires in part that two physically independent circuits between the offsite transmission network and the onsite Class IE distribution system be OPERABLE. The ACTION statement provides a 24-hour out-of-service time when both required offsite circuits are not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable normal power sources, both of the offsite circuits, would also be inoperable. This would dictate invoking the applicable ACTION statement for the inoperable normal power sources instead, provided the other specified conditions are satisfied. In this case, this would mean that for one division the emergency power source must be OPERABLE (as must be the components supplied by the emergency power source) and all redundant systems, subsystems, trains, components and devices

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DELETED in the other division must be OPERABLE, or likewise satisfy Specification 3.0.5 (i.e., be capable of performing their design functions and have an emergency power source OPERABLE). In other words, both emergency power sources must be OPERABLE and all redundant systems, subsystems, trains, components and devices in both divisions must also be OPERABLE. If these conditions are not satisfied, action is required in accordance with this specification.

In MODES 5 or 6 Specification 3.0.5 is not applicable, and thus the individual ACTION statements for each applicable Limiting Condition for Operation in these MODES must be adhered to.

Specification 3.0.6 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of testing required to restore and demonstrate:

- a. The OPERABILITY of the equipment being returned to service; or
- b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the testing required to restore and demonstrate the operability of the equipment. This Specification does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the testing required to restore and demonstrate OPERABILITY.

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of testing required to restore OPERABILITY of another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of testing required to restore and demonstrate the OPERABILITY of another channel in the same trip system.

ELECTRICAL POWER SYSTEMS
BASIS

3/4.8.1 and 3/4.8.2 A.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility, and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10 CFR Part 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least two independent sets of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of one onsite A.C. source.

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The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The Applicability of specifications 3.8.2.2, 3.8.2.4, and 3.8.2.6 includes the movement of irradiated fuel assemblies. This will insure adequate electrical power is available for proper operation of the fuel handling building ventilation system during movement of irradiated fuel in the spent fuel pool.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are based upon the recommendations of Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977. Regulatory Guide 1.108 criteria for determining and reporting valid tests and failures, and accelerated diesel generator testing, have been superseded by implementation of the Maintenance Rule for the diesel generators per 10CFR50.65. In addition to the Surveillance Requirements of 4.8.1.1.2, diesel preventative maintenance is performed in accordance with procedures based on manufacturer's recommendations with consideration given to operating experience.

The minimum voltage and frequency stated in the Surveillance Requirements (SR) are those necessary to ensure the Emergency Diesel Generator (EDG) can accept Design Basis Accident (DBA) loading while maintaining acceptable voltage and frequency levels. Stable operation at the nominal voltage and frequency values is also essential in establishing EDG OPERABILITY, but a time constraint is not imposed. The lack of a time constraint is based on the fact that a typical EDG will experience a period of voltage and frequency oscillations prior to reaching steady state operation if these oscillations are not dampened out by load application. In

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When a system or component is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may still be considered OPERABLE, provided the appropriate Actions of 3.8.1.1.a.2, b.2 or d.2 are satisfied.

Action 3.8.1.1.a.2, which only applies if the train cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required systems. Failure of a single offsite circuit will generally not, by itself, cause any equipment to lose normal AC power.

Action 3.8.1.1.b.2 is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. Action 3.8.1.1.d.2, which applies when two offsite circuits are inoperable, is intended to provide assurance that an event with a coincident single failure will not result in a complete loss of redundant required safety functions.

These systems are powered from the redundant AC electrical power train. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, may not be included. Redundant required system or component failures consist of inoperable equipment associated with a train, redundant to the train that has an inoperable DG or offsite power.

The completion time for these actions is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This completion time also allows for an exception to the normal "time zero" for beginning the allowed outage time clock, starting only on discovery that both:

- a. One train has no offsite power supplying its loads, one DG is inoperable or two required offsite circuits are inoperable; and
- b. A required system or component on the other train is inoperable.

If at any time during these conditions a redundant required system or component subsequently becomes inoperable, this completion time begins to be tracked. Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System, or one required DG inoperable, coincident with one or more inoperable required support or supported systems or components that are associated with the other train that has power, results in starting the completion times for the Action. The specified time is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE AC supplies (one offsite circuit and three DGs for Condition (a), two offsite circuits and two DGs for Condition (b), or three DGs for Condition (d)) are adequate to supply electrical power to the onsite Class 1E

Distribution System. Thus, on a component basis, single failure protection for the required system or component's function may have been lost; however, function has not been lost. The completion time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required system or component. Additionally, the completion time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. The completion time for Condition d (loss of both offsite circuits) is reduced to 12 hours from that allowed for one train without offsite power (Action 3.8.1.1.a.2). The rationale is that Regulatory Guide 1.93 allows a completion time of 24 hours for two required offsite circuits inoperable, based upon the assumption that two complete safety trains are OPERABLE. When a concurrent redundant required system or component failure exists, this assumption is not the case, and a shorter completion time of 12 hours is appropriate.