

AUG 25 2000

LRN-00-0330  
LCR S00-03



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

Gentlemen:

**SUPPLEMENT TO REQUEST FOR  
CHANGE TO TECHNICAL SPECIFICATIONS  
3/4.8.1 A.C. SOURCES  
SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311**

By letter dated May 15, 2000, Public Service Electric & Gas Company (PSE&G) requested a revision to the Technical Specifications (TS) for the Salem Generating Station Unit Nos. 1 and 2 respectively. The proposed TS change modified the testing requirements for the diesel generators and expanded the diesel generator loading band for the monthly, six-month, and the two hour loaded pre-requisite for the Hot Restart test in accordance with the guidance of Regulatory Guide 1.9 "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," Rev. 3, 1993.

On August 17, 2000, a telephone conference (telecon) took place between PSE&G and NRC personnel to discuss the proposed diesel generator loading band expansion. Based upon this telecon, PSE&G is revising its diesel generator loading band from 2330 to 2600 KW to 2340 to 2600 KW. As discussed in the telecon, PSE&G will also include in its test procedure: (1) a more limiting acceptance criterion to ensure that the Technical Specification loading band is not exceeded, and (2) a note to indicate that the band is meant as guidance to preclude routine exceedances of the recommended diesel generator's manufacturer's design loads. Loads in excess of this band for special testing or temporary variations due to changing busloads shall not invalidate the test or constitute inoperability of the tested diesel generator.

This note, which is similar to the note already contained in the present Salem Technical Specifications, will provide operational flexibility to the operator performing the test.

A001

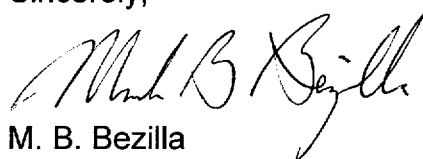
AUG 25 2000

Including this note in the test procedure is appropriate because: (1) it is already contained in the Salem TS, and (2) the purpose of these tests is to verify the diesel starting capability and readiness to accept load; not to verify the endurance limits of the diesel generators. Loading levels of the diesel generators are verified during the performance of the 24-hour endurance run. Because the loading criteria for the 24-hour endurance test is not being changed, changing the loading level at the one hour surveillance test will not impact current verification of the diesel's ability to sustain the level of loading for a continued period of time.

Attachment 1 contains the original no significant hazards considerations, which PSE&G has reviewed and determined that its conclusion remain unchanged and valid. Attachment 2 contains the pertinent new marked up TS pages.

Should you have any questions regarding this request, please contact E. Villar at (856) 339-5456.

Sincerely,

A handwritten signature in black ink, appearing to read "M. B. Bezilla". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

M. B. Bezilla  
Vice President - Operations

Affidavit  
Attachments (2)

AUG 25 2000

C     Mr. H. Miller, Administrator - Region I  
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       P. O. Box 415  
       Trenton, NJ 08625

STATE OF NEW JERSEY )  
 ) SS.  
COUNTY OF SALEM )

I am Vice President - Operations of PSEG Nuclear LLC, and as such, I find the matters set forth in the above referenced letter, concerning Salem Generating Station, Units 1 and 2, are true to the best of my knowledge, information and belief.

Phil B. Bezilla

this 25<sup>th</sup> day of August, 2000

Jennifer M. Turner  
Notary Public of New Jersey

My Commission expires on \_\_\_\_\_ My Commission Expires July 29, 2009

**ATTACHMENT 1**  
**LRN-00-0330**

**LCR S00-03**

**SALEM GENERATING STATION**  
**UNIT NOS. 1 AND 2**  
**DOCKET NOS. 50-272 AND 50-311**

SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311  
CHANGE TO TECHNICAL SPECIFICATIONS

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION -  
10CFR50.92 EVALUATION

Pursuant to 10CFR50.92, PSE&G reviewed the proposed revision to determine whether the request involves a significant hazards consideration. PSE&G has determined 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

The proposed changes to the Technical Specifications (TS) 3.8.1.1 Action Statements (AS) a, b and surveillance testing 4.8.1.1.2.a.2, 4.8.1.1.2.c, and 4.8.1.1.2.f are indicated below. The added phrases are shown in bold and underlined and those phrases that are being deleted are shown with a line through them.

A Proposed changes to (TS) 3.8.1.1 AS 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; ~~and demonstrate OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours;~~ 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 Proposed changes to (TS) 3.8.1.1 AS 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 a 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.** ~~If the diesel generator is inoperable for any reason other than preventive maintenance, demonstrate the OPERABILITY of the remaining diesel~~

**SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311  
CHANGE TO TECHNICAL SPECIFICATIONS**

generators by performing Surveillance Requirement ~~4.8.1.1.2.a.2~~ within 24 hours. 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."

- C Proposed changes to the EDG loading from 2500-2600 KW to 2330-2600 KW during Surveillance Testing 4.8.1.1.2. a. 2, 4.8.1.1.2.c, and 4.8.1.1.2.f.

4.8.1.1.2.a.2:

"...Subsequently, verifying the generator is synchronized with voltage maintained  $\geq 3910$  volts and  $\leq 4580$  volts, gradually loaded to ~~2500~~ 2330 - 2600 KW\*\*, and operates at a load of ~~2500~~ 2330 - 2600 KW \*\* for greater than or equal to 60 minutes."

4.8.1.1.2.c

"...The generator shall be synchronized to its emergency bus with voltage maintained  $\geq 3910$  volts and  $\leq 4580$  volts, loaded to ~~2500~~ 2330 - 2600 KW\*\* in less than or equal to 60 seconds, and operates at a load of ~~2500~~ 2330 - 2600 KW \*\* for at least 60 minutes."

4.8.1.1.2.f.

"...At least once per 18 months, the following test shall be performed within 5 minutes of the diesel shutdown after the diesel has operated for at least two hours at ~~2500~~ 2330 - 2600 KW \*\*."

- D Deletes surveillance 4.8.1.1.2.d.7 from the NOTE at the bottom of Technical Specifications 3.8.1.2 and replaces it with 4.8.1.1.2.g.

-----NOTE-----

The following surveillances are not required to be performed to maintain operability during Modes 5 and 6. These surveillances are: 4.8.1.1.1.b, 4.8.1.1.2.d.2, 4.8.1.1.2.d.3, 4.8.1.1.2.d.4, 4.8.1.1.2.d.6, ~~4.8.1.1.2.d.7,~~ 4.8.1.1.2.d.9, 4.8.1.1.2.e, ~~and 4.8.1.1.2.f,~~ and 4.8.1.1.2.g.

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SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311  
CHANGE TO TECHNICAL SPECIFICATIONS

**BASIS**

1. ***Will not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The emergency diesel generator system is not an accident initiator. Eliminating the requirement to demonstrate that the operable diesel generators function properly, when there is no evidence that the inoperability of the affected diesel generator is the result of a potential common mode failure, will not increase the probability or the consequences of previously evaluated accidents, which rely upon emergency power supplies.

Eliminating the testing of the diesel generators whenever a single off-site power source is inoperable does not establish operability of the remaining off-site power source. Operability is determined by the performance of surveillance  
4.8.1.1.1.1.a.

Elimination of unnecessary starts (challenges) to the diesel generators will result in increased equipment reliability and hence improved overall reliability for emergency onsite power supplies, as follows:

- A) Reduce the overall engine degradation resulting from wear and tear of testing and reduce the probability of failure due to engine degradation, and,
- B) Minimize the number of entries into an equipment configuration where a potential challenge to the safety function exists during the period of the tests.

Expanding the band from 2500-2600 KW to 2330-2600 KW to accommodate instrument inaccuracy does not change any design parameter. The diesel generator will still be fully loaded (90% to 100% of continuous rating) in accordance with Reg. Guide 1.9, Rev. 3, Section 2.2.2. The full capability of the diesel generator to carry its load will continue to be demonstrated during the 24 endurance run, which is unaffected by this request.

The proposed change to the note in TS 3.8.1.2 is a correction of an administrative oversight (renumbering of a surveillance requirement) and does not change the surveillance content or intent.

Therefore, the proposed change will not involve a significant increase in the probability or consequences of an accident previously evaluated.



SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311  
CHANGE TO TECHNICAL SPECIFICATIONS

**2. *Does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

Eliminating the requirement to demonstrate that the operable diesel generators function properly affects testing requirements only and does not alter the physical configuration of the plant, replace or modify existing equipment, affect operating practices or create any new or different accident precursors.

Similarly, expanding the band from 2500-2600 KW to 2330-2600 KW to accommodate instrument inaccuracy does not change the manner in which the diesel generator is operated, or introduces any new or different failure from any previously evaluated.

The proposed change to the note in TS 3.8.1.2 is a correction of an administrative oversight (renumbering of a surveillance requirement) and does not change the surveillance content or intent.

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

**3. *Does not involve a significant reduction in a margin of safety.***

Eliminating the testing of the diesel generators whenever a single off-site power source is inoperable does not establish operability of the remaining off-site power source. Operability of the remaining off-site power source is determined by the performance of surveillance 4.8.1.1.1.a. The normally performed monthly surveillance ensures the diesel will be available to perform their safety function.

Eliminating the requirement to demonstrate that the operable diesel generators function properly, when there is no evidence that the inoperability of the affected diesel generator is the result of a potential common mode failure, does not reduce the margin of safety. If the evaluation is inconclusive or determines that a cause of inoperability for a diesel generator is a potential common mode failure then operability testing will be conducted for the remaining operable diesels. This action will assure that the initial assumption of two independent power supplies, utilized in the accident analysis, remain valid.

The proposed changes do not adversely affect the ability of the diesels to operate when called upon. Rather, these changes should result in improved overall reliability of the diesels and therefore the margin of safety is preserved for those events in which there is a dependence upon on-site AC power supplies.

**SALEM GENERATING STATION  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311  
CHANGE TO TECHNICAL SPECIFICATIONS**

Expanding the band from 2500-2600 KW to 2330-2600 KW to accommodate instrument inaccuracy does not introduce any new or different failure from any previously evaluated or changes the manner in which the diesel generator is operated. Expanding the band does not change any instrumentation set point, or changes to the auto loading sequence of the diesel. The capability of the diesel to be loaded to its manufactured maximum ratings will continue to be demonstrated during the performance of the diesel endurance run, which is unaffected by this request.

The proposed change to the note in TS 3.8.1.2 is a correction of an administrative oversight (renumbering of a surveillance requirement) and does not change the surveillance content or intent.

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

**CONCLUSION**

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

**ATTACHMENT 2**  
**LRN-00-0330**

**LCR S00-03**

**SALEM GENERATING STATION**  
**UNIT NOS. 1 AND 2**  
**DOCKET NOS. 50-272 AND 50-311**

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Two physically independent A.C. circuits between the offsite transmission network and the onsite Class 1E distribution system (vital bus system) shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) vital bus supply from one 13/4 kv transformer to the other 13/4 kv transformer.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by:
  1. Verifying the fuel level in its day tank.
  2. Verifying the diesel generator starts from standby conditions\* and achieves  $\geq 3910$  volts and  $\geq 58.8$  Hz in  $\leq 13$  seconds, and subsequently achieves steady state voltage of  $\geq 3910$  and  $\leq 4400$  volts and frequency of  $60 \pm 1.2$  Hz.  
  
Subsequently, verifying the generator is synchronized with voltage maintained  $\geq 3910$  and  $\leq 4580$  volts, gradually loaded to 2500-2600 kw\*\*, and operates at a load of 2500-2600 kw for greater than or equal to 60 minutes.
  3. Verifying the diesel generator is aligned to provide standby power to the associated vital bus.
- b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to one hour by checking for and removing accumulated water from the day tanks.
- c. At least once per 6 months by verifying the diesel generator starts from standby conditions\* and achieves  $\geq 3910$  volts and  $\geq 58.8$  Hz in  $\leq 13$  seconds, and subsequently achieves steady state voltage of  $\geq 3910$  and  $\leq 4400$  volts and frequency of  $60 \pm 1.2$  Hz.

The generator shall be synchronized to its emergency bus with voltage maintained  $\geq 3910$  and  $\leq 4580$  volts, loaded to 2500-2600\*\* kw in less than or equal to 60 seconds, and operate at a load of 2500-2600 kw for at least 60 minutes.

This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.2, may also serve to concurrently meet those requirements.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV bus differential and generator differential), are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.
7. Deleted
8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.
9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.
- e. At least once per ten years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously\*, during shutdown, and verifying that all diesel generators accelerate to at least 58.8 Hz in less than or equal to 13 seconds.
- f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at ~~2500~~ <sup>2340</sup> 2600 kw\*\*:
- Verifying the diesel generator starts and achieves  $\geq 3910$  volts and  $\geq 58.8$  Hz in  $\leq 13$  seconds, and subsequently achieves steady state voltage of  $\geq 3910$  and  $\leq 4400$  volts and frequency of  $60 \pm 1.2$  Hz.
- g. At least once per 18 months verifying the diesel generator operates for at least 24 hours\*. During the first 2 hours of this test, the diesel generators shall be loaded to 2760-2860 Kw\*\*. During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 Kw\*\*. The steady state voltage and frequency shall be maintained at  $\geq 3910$  and  $\leq 4580$  volts and  $60 \pm 1.2$  Hz during this test.
- 4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
1. Verifying the level in each of the above required fuel storage tanks.
  2. Verifying that both fuel transfer pumps can be started and transfer fuel from the fuel storage tanks to the day tanks.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

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4.8.1.1.1 Two physically independent A.C. circuits between the offsite transmission network and the onsite Class 1E distribution system (vital bus system) shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) vital bus supply from one 13/4 kv transformer to the other 13/4 kv transformer.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by:
  1. Verifying the fuel level in its day tank.
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Subsequently, verifying the generator is synchronized with voltage maintained  $\geq 3910$  and  $\leq 4580$  volts, gradually loaded to ~~2500~~-2600 kw\*\*, and operates at a load of ~~2500~~-2600 kw for greater than or equal to 60 minutes. 2340

3. Verifying the diesel generator is aligned to provide standby power to the associated vital bus.
- b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day tanks.
- c. At least once per 6 months by verifying the diesel generator starts from standby conditions\* and achieves  $\geq 3910$  volts and  $\geq 58.8$  Hz in  $\leq 13$  seconds, and subsequently achieves steady state voltage of  $\geq 3910$  and  $\leq 4400$  volts and frequency of  $60 \pm 1.2$  Hz.

The generator shall be synchronized to its emergency bus with voltage maintained  $\geq 3910$  and  $\leq 4580$  volts, loaded to ~~2500~~-2600\*\* kw in less than or equal to 60 seconds, and operate at a load of ~~2500~~-2600 kw for at least 60 minutes. 2340

This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.2, may also serve to concurrently meet those requirements.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV Bus differential and generator differential) are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.
- 7. Deleted
- 8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.
- 9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.
- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously\*, during shutdown, and verifying that all diesel generators accelerate to at least 58.8 Hz in less than or equal to 13 seconds.
- f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at ~~2500~~-2600 kw\*\*:  

3910

  
Verifying the diesel generator starts and achieves  $\geq 3910$  volts and  $\geq 58.8$  Hz in  $\leq 13$  seconds, and subsequently achieves steady state voltage of  $\geq 3910$  and  $\leq 4400$  volts and frequency of  $60 \pm 1.2$  Hz.
- g. At least once per 18 months verifying the diesel generator operates for at least 24 hours\*. During the first 2 hours of this test, the diesel generators shall be loaded to 2760-2860 Kw\*\*. During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 Kw\*\*. The steady state voltage and frequency shall be maintained at  $\geq 3910$  and  $\leq 4580$  volts and  $60 \pm 1.2$  Hz during this test.

4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
  - 1. Verifying the level in each of the above required fuel storage tanks.
  - 2. Verifying that both fuel transfer pumps can be started and transfer fuel from the fuel storage tanks to the day tanks.