

Public Service
Electric and Gas
Company

Steven E. Miltenberger

Public Service Electric and Gas Company P.O. Box 236, Hancocks Bridge, NJ 08038 609-339-1100

Vice President and Chief Nuclear Officer

AUG 05 1994

NLR-N94127

LCR 94-10

LCR 94-13

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

Gentlemen:

**LICENSE AMENDMENT APPLICATION
EMERGENCY DIESEL GENERATOR SURVEILLANCE CHANGES
FACILITY OPERATING LICENSE NPF-57
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354**

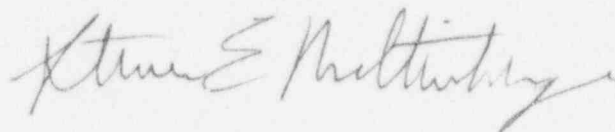
This letter submits an application for amendment to Appendix A of Facility Operating License NPF-57 for the Hope Creek Generating Station, and is being filed in accordance with 10CFR50.90. The amendment request proposes to incorporate the line-item Technical Specification improvements in Generic Letter 93-05 relevant to Emergency Diesel Generator (EDG) surveillance requirements.

A description of the requested amendment, supporting information and analyses for the change, and the basis for a no significant hazards consideration determination are provided in Attachment 1. The Technical Specification pages affected by the proposed change are marked-up in Attachment 2. Pursuant to the requirements of 10CFR50.91(b)(1), a copy of this request for amendment has been sent to the State of New Jersey.

Upon NRC approval of this proposed change, PSE&G requests that the amendment be made effective on the date of issuance, but implemented within 120 days to provide sufficient time for associated administrative activities.

Should you have any questions regarding this request, we will be pleased to discuss them with you.

Sincerely,



120000
9408170099 940805
PDR ADOCK 05000354
P PDR

A001
11

AUG 05 1994

Document Control Desk
NLR-N94127

-2-

Affidavit
Attachments (3)

C Mr. T. T. Martin, Administrator - Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. D. Moran, Licensing Project Manager
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Mr. R. Summers (S09)
USNRC Senior Resident Inspector

Mr. K. Tosch, Manager IV
NJ Department of Environmental Protection
Division of Environmental Quality
Bureau of Nuclear Engineering
CN 415
Trenton, NJ 08625

REF: NLR-N94127
LCR 94-10
LCR 94-13

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

S. E. Miltenberger, being duly sworn according to law deposes and says:

I am Vice President & Chief Nuclear Officer of Public Service Electric and Gas Company, and as such, I find the matters set forth in the above referenced letter, concerning the Hope Creek Generating Station, are true to the best of my knowledge, information and belief.

Stuart E. Miltenberger

Subscribed and Sworn to before me
this 5th day of August, 1994

Kimberly Jo Brown
Notary Public of New Jersey

My Commission expires on _____
KIMBERLY JO BROWN
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 21, 1998

ATTACHMENT 1
PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS

LICENSE AMENDMENT APPLICATION
EDG SURVEILLANCE CHANGES
FACILITY OPERATING LICENSE NPF-57
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

NLR-N94127
LCR 94-10, 94-13

I. DESCRIPTION OF THE PROPOSED CHANGES

As indicated on the marked-up pages in Attachment 2, PSE&G requests that Technical Specification 3.8.1.1 be revised to:

LCR 94-10

- a. Eliminate the requirements to start the Emergency Diesel Generators (EDGs) with an inoperable offsite circuit(s) of AC electrical power;
- b. Add a provision that eliminates required testing of the remaining EDGs when one EDG is inoperable due to an inoperable support system or an independently testable component with no potential for common mode failure for the remaining EDGs. In addition, if testing of the EDGs is required, then the surveillances will be performed within 16 hours instead of 24 hours as currently specified.

LCR 94-13

Delete the requirement to perform a Loss of Offsite Power (LOP) test (Surveillance Requirement 4.8.1.1.2.h.4.b) following the 24 hour EDG endurance run test. In its place, a hot restart test (no LOP load sequencing) will be established.

II. REASON FOR THE PROPOSED CHANGES

The NRC issued NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," in December 1992 to provide the results of a comprehensive examination of surveillance testing required by Technical Specifications. This document found that while some testing at power is essential to verify equipment and system operability, safety can be improved, equipment degradation decreased, and unnecessary personnel burden relaxed by reducing the amount of testing at power.

On September 27, 1993, the NRC issued Generic Letter (GL) 93-05, "Line-Item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation." Using this Generic Letter, licensees are encouraged to propose

Attachment 1
EDG SURVEILLANCE CHANGES

LCR 94-10, 94-13
NLR-N94127

Technical Specification changes that are consistent with the guidance provided.

LCR 94-10

Pursuant to the NRC recommendations in NUREG-1366 and GL 93-05, the changes proposed by PSE&G for the ACTION statements of Technical Specification 3.8.1.1 revise the action requirements to reduce the starting of non-affected EDGs when the limiting conditions for operation of the electrical distribution system are degraded.

Currently, Technical Specification 3.8.1.1 ACTION statements require testing of EDGs within 24 hours upon loss of an offsite power circuit(s) and/or an EDG. The basis for the performance of this testing is to verify EDG reliability. However, industry experience has shown that this required (and excessive) testing has, in fact, reduced overall reliability of the EDGs. Therefore, the reduction of these "unnecessary" EDGs starts would result in an improvement in EDG reliability.

Excessive EDG testing required by the current Technical Specification requirements also results in unnecessary challenges to safety systems (i.e., diesel fuel oil systems). In addition, the attention of operating personnel is diverted from implementing corrective actions for the inoperable EDG or offsite AC power circuit in order to perform these EDG surveillances. The proposed changes to the Technical Specifications would both reduce the potential for unnecessary challenges and alleviate operational burdens.

However, in order to also improve the overall level of plant safety, EDG testing (performance of Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5) will be performed, when required, within 16 hours instead of the 24 hours currently specified.

In conclusion, the changes proposed in this LCR are being made since they improve EDG reliability, reduce operational burden and provide an increased level of safety at Hope Creek.

LCR 94-13

Pursuant to the NRC recommendations in NUREG-1366 and GL 93-05, the changes proposed by PSE&G for Surveillance Requirement 4.8.1.1.2.h.8 eliminate the requirement to perform a hot LOP test following the 24 hour EDG endurance run test. As presently written, the Technical Specifications require the demonstration of EDG hot restart capability by initiating a LOP test within

five minutes of completing the 24 hour EDG run for each of the four EDGs. This requirement is derived from Regulatory Guide 1.108, Rev. 1, "Periodic Testing of Diesel Units used as Onsite Electric Power Systems at Nuclear Power Plants." The current requirements, however, create scheduling demands by reducing flexibility and imposing unnecessary operational burdens without a corresponding increase in EDG reliability. The requirement to start and load the EDG, as opposed to just starting the EDG, does not contribute to verifying the ability of the EDG to start from normal operating temperature. Therefore, PSE&G is proposing that the performance of the hot LOP test be changed to a hot restart test (no LOP load sequencing required).

III. JUSTIFICATION FOR THE PROPOSED CHANGES

The NRC staff has completed a comprehensive examination of Technical Specification Surveillance Requirements that require testing during power operation. This effort is part of the NRC Technical Specification Improvement Program. The results of this work are reported in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," dated December 1992.

The staff found that while the majority of the testing at power is important, safety can be improved, equipment degradation decreased, and an unnecessary burden on personnel resources eliminated by reducing the amount of testing that the Technical Specifications require at power operating conditions.

The NRC staff used four criteria to screen the Surveillance Requirements. The criteria are as follows:

1. The surveillance could lead to a plant transient.
2. The surveillance results in unnecessary wear to equipment.
3. The surveillance results in radiation exposure to plant personnel which is not justified by the safety significance of the surveillance.
4. The surveillance places an unnecessary burden on plant personnel because the time required is not justified by the safety significance of the surveillance.

On September 27, 1993, the NRC issued Generic Letter (GL) 93-05, "Line-Item Improvements to Reduce Surveillance Requirements for Testing During Power Operation." GL 93-05 encourages licensees to propose Technical Specification changes that are consistent

with the guidance provided.

LCR 94-10

With one exception, the changes proposed by this LCR are consistent with the guidance provided in GL 93-05. In addition, these changes are analogous to those submitted by North Atlantic Energy Service Corporation's Seabrook Station, Unit 1, on October 28, 1993.

The revisions to the ACTION statements of Technical Specification 3.8.1.1 eliminate the requirements to test the EDGs upon loss of an offsite power circuit(s) and/or an EDG. As stated in NUREG-1366, industry experience has shown that the currently required testing (i.e., performance of Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5) does, in fact, reduce overall EDG reliability. Elimination of these "unnecessary" surveillance tests would therefore improve EDG reliability.

The proposed changes to eliminate excessive EDG testing also reduce the potential for unnecessary shutdowns that result in challenges to safety systems. In addition, the changes would permit the operating personnel to focus on implementing corrective actions for the inoperable EDG or offsite AC power circuit instead of performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5.

Finally, this LCR would improve the overall level of safety, since testing (performance of Surveillance Requirement 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5) will now be required within 16 hours (instead of 24) when one EDG is inoperable due to any cause other than preplanned preventative maintenance or those situations where the cause for inoperability has not been conclusively demonstrated to preclude the potential for a common mode failure.

However, establishment of a 16 hour limit to demonstrate EDG operability is an exception to GL 93-05, which specifies a limit of 8 hours. This exception for Hope Creek is deemed necessary since:

- The onsite Class-1E AC power supply consists of four dedicated EDGs (unlike most other stations with two or three EDGs dedicated per unit);
- Performance of Surveillance Requirement 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 takes up to 4.25 hours to complete (including prestart checks and samples, barring over, synchronizing and loading, unloading, cooldown and post-run checks,

samples and verifications); and

- Each EDG is tested in series in order to prevent more than one EDG from running in parallel with the offsite power grid and to minimize possible confusion in surveillance sampling and paperwork.

Currently, even under the best circumstances, completion of the required surveillances for the three EDGs would require more than 8 hours. If the 8 hour limit was established, greater demands on operations personnel would occur since simultaneous performance of the surveillances (excluding synchronization to the offsite power grid) would have to be arranged. However, testing the EDGs one at a time (possible through the establishment of the 16 hour limit) would enable operators to focus on, and complete the demonstration of, the operability of an EDG prior to performing surveillances on the other machines. The 16 hour limit will also allow for a shift turnover to take place during the surveillance testing.

PSE&G is aware of the NRC's intent in GL 95-05 to minimize the period of continued plant operation where the cause for EDG inoperability has not been conclusively demonstrated to preclude the potential for a common mode failure. Completion of Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 under a 16 hour limit for the three EDGs still meets this intent by requiring operators to initiate surveillance testing in a timely manner. The 16 hour period requires the Hope Creek operators to test the three EDGs in the same manner (and accomodate a shift turnover) as most other plants testing only two EDGs in an 8 hour period.

The improved level of plant safety, reduced degradation of the EDGs and the alleviation of operational burdens described above all justify the changes proposed for Technical Specification 3.8.1.1.

LCR 94-13

The changes proposed by this LCR are consistent with the guidance provided in GL 93-05, and in addition, are analogous to those approved by the NRC in an SER dated October 18, 1993, for Niagara Mohawk Power Corporation's Nine Mile Point Nuclear Station, Unit 2.

The purpose of the EDG hot restart test is to demonstrate the ability of the diesel to restart following shutdown after a fully loaded run, and achieve the required voltage and frequency within the time consistent with the safety analyses. This ensures that

the EDG's would be capable of performing their safety function if called upon following routine diesel operation (e.g., monthly surveillance testing).

As presently written, the Technical Specification Surveillance Requirement 4.8.1.1.2.h.8 specifies the demonstration of EDG hot restart capability by initiating a LOP test within five minutes of completing the 24 hour EDG run for each of the four EDGs. This requirement is derived from Regulatory Guide 1.108, Rev. 1, "Periodic Testing of Diesel Units used as Onsite Electric Power Systems at Nuclear Power Plants." The current requirements, however, create scheduling demands by reducing flexibility and imposing unnecessary operational burdens without a corresponding increase in EDG reliability. The requirement to start and load the EDG, as opposed to just starting the EDG, does not contribute to verifying the ability of the EDG to start from normal operating temperature. As previously stated by the NRC in the October 18, 1993, SER for Nine Mile Point, Unit 2, requiring a LOP test in conjunction with a hot restart imposes a strain on multiple systems/components without measurable benefit.

The LOP test will continue to be performed at standby conditions (as required by Technical Specification Surveillance Requirement 4.8.1.1.2.h.4.b) to provide assurance that the EDG is capable of responding to a LOP as assumed in the accident analyses.

Since the EDG design and function remain as previously analyzed, the EDG response during accident conditions is not affected, and operational flexibility is increased, the proposed changes in this LCR can be justified.

NOTE: The proposed changes to the existing Technical Specifications are indicated in Attachment 2 of this LCR. However, these changes also affect Technical Specifications that were proposed for revision in PSE&G LCR 93-23, submitted to the NRC via letter NLR-N94014, dated March 31, 1994. Attachment 3 of this letter contains the marked up pages reflecting the proposed changes of this LCR and that of LCR 93-23. LCR 94-13 proposed changes have revision bars alongside them.

The order of approval does not affect the changes proposed in LCR 93-23 or LCR 94-13, nor does either LCR impact the No Significant Hazards Consideration of the other submittal.

IV. SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

PSE&G has, pursuant to 10 CFR 50.92, reviewed the proposed amendment to determine whether our request involves a significant hazards consideration. We have determined that operation of the Hope Creek Generating Station in accordance with the proposed changes:

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

LCR 94-10

The proposed changes in this License Change Request (LCR) have been extensively reviewed by the NRC during the preparation of NUREG-1366 and Generic Letter 93-05, and by PSE&G during the development and approval of this LCR. The LCR revises the current ACTION statement of Technical Specification 3.8.1.1 to eliminate testing of the unaffected Emergency Diesel Generators (EDGs) upon loss of an offsite power circuit(s) and/or an EDG. The basis for this testing was originally to verify the reliability of the EDGs, however, as stated in NUREG-1366, industry experience has shown that excessive testing of the EDGs has in fact reduced reliability.

The EDG design and function remain as previously analyzed and the EDG response during accident conditions is not affected. This change will improve EDG performance by reducing the number of unnecessary starts and by requiring more appropriate testing (within 16 hours instead of 24 hours) when there is a potential common mode failure.

These changes will not result in a significant increase in the probability or consequences of a previously evaluated accident, nor will it result in a significant reduction in a margin of safety.

LCR 94-13

The proposed changes in this License Change Request (LCR) have been extensively reviewed by the NRC during the preparation of NUREG-1366 and Generic Letter 93-05, and by PSE&G during the development and approval of this LCR. Regulatory Guide 1.108, Rev. 1, states that the performance of a Loss of Off-site Power (LOP) test (Surveillance Requirement 4.8.1.1.2.h.4.b) immediately following the 24

hour endurance run demonstrates that the Emergency Diesel Generator (EDG) can start in the prescribed time when the EDG is at its normal operating temperature. The purpose of performing the LOP test immediately following the 24 hour endurance run is to demonstrate the hot restart capability of the EDG at full load conditions. However, demonstrating diesel generator hot restart capability without loading the engine does not invalidate or reduce the effectiveness of the hot restart test. Performance of this test can be conducted in any plant condition since its performance at power will have no adverse effect on plant operations.

The LOP test will continue to be performed at standby conditions to provide assurance that the EDG is capable of responding to a LOP as assumed in the accident analyses.

EDG design and function remain as previously analyzed. Their response during accident conditions are not affected by these changes. Therefore, no significant increase in the probability or consequences of an accident previously evaluated results from these changes.

2. Will not create the possibility of a new or different kind of accident from any accident previously evaluated.

LCR 94-10

The elimination of the unnecessary EDG starts will not result in any changes in plant configuration or operation. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any previously evaluated or analyzed.

LCR 94-13

The proposed revisions to the Technical Specifications do not involve a physical change in any system configuration and do not introduce new operating configurations. These changes will not result in any net reduction in testing and will not affect EDG reliability. This test may be performed in any plant condition since its performance at power will have no adverse effect on plant operations. Therefore, these changes do not create the possibility of a new or different kind of accident from any previously evaluated.

3. Will not involve a significant reduction in a margin of safety.

LCR 94-10

The changes proposed in this LCR do not reduce the ability of any system or component to perform its safety related function. The basis of NUREG-1366, Generic Letter 93-05 and the analysis performed in support of this LCR is that the reduction in unnecessary EDG starts can improve safety by diminishing challenges to plant systems and reducing equipment wear or degradation. These proposed changes involve only surveillance frequencies and do not change the method of performing any surveillance. The operation of systems and equipment remains unchanged. Therefore, eliminating unnecessary EDG starts does not involve a reduction in the margin of safety.

LCR 94-13

Surveillance testing per the proposed Technical Specifications would continue to demonstrate the ability of the EDGs to perform their intended function of providing electrical power to the emergency safety systems needed to mitigate design basis transients consistent with the plant safety analyses. The margin of safety demonstrated by the plant safety analyses is therefore not affected by the proposed changes.

V. 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 insofar as the changes: (i) do not involve a significant increase in the probability or consequences of an accident previously evaluated, (ii) do not create the possibility of a new or different kind of accident from any accident previously evaluated, and (iii) do not involve a significant reduction in the margin of safety.