



LRN-01-0018

**JAN 15 2001**

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

Gentlemen:

**REQUEST FOR ENFORCEMENT DISCRETION  
TECHNICAL SPECIFICATION 3.8.1.1.b  
EMERGENCY DIESEL GENERATORS  
HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSES NPF-57  
DOCKET NO. 50-354**

On January 10, 2001 PSEG Nuclear LLC, requested Regional Enforcement Discretion from the provisions of Technical Specification (TS) 3.8.1.1, "A.C. Sources – Operating." This request was documented in PSEG Nuclear Letter LRN-01-015, dated January 12, 2001.

As discussed in PSEG Nuclear Letter LRN-01-015 and in Attachment 1 to this letter, PSEG Nuclear concluded that granting this request would not be a detriment to the public health and safety and would involve neither a significant hazards consideration nor any adverse environmental consequences.

PSEG Nuclear requested enforcement discretion for an extension of 48 hours for the "A" Emergency Diesel Generator (EDG) allowed outage time (AOT) specified in TS 3.8.1.1. In view of the circumstances, PSEG Nuclear concluded that there would be no safety benefit from a plant shutdown in accordance with Technical Specification 3.8.1.1. Granting this enforcement discretion would allow for the completion of emergent maintenance and testing activities associated with the restoration of the "A" EDG while the plant remained on-line and would not jeopardize public health and safety.

The requested duration of this enforcement discretion was 48 hours, beginning at 0200 hours on January 11, 2001 and lasting until 0200 hours on January 13, 2001. Absent the exercise of enforcement discretion, TS 3.8.1.1 required the station to be in HOT SHUTDOWN by 1400 hours, on January 11, 2001.

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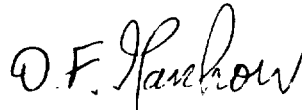
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PSEG Nuclear LLC understood that, if granted, the requested enforcement discretion was for the conditions described in the request. For any other conditions that would cause an EDG to become inoperable, the appropriate TS action statement would apply.

Regional Enforcement Discretion from the provisions of TS 3.8.1.1, for a period of 48 hours, was approved orally at 2020 hours on January 10, 2001. However, subsequent to that approval, the "A" EDG was returned to an OPERABLE status at 1009 hours on January 11, 2001, before the expiration of the TS 3.8.1.1 AOT. Therefore, the enforcement discretion was not exercised.

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

Sincerely,



D. F. Garchow  
Vice President - Operations

Attachment

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This request for enforcement discretion includes the following information pursuant to NRC Inspection Manual Part 9900: Operations - Notices of Enforcement Discretion.

**1. THE TECHNICAL SPECIFICATION OR OTHER LICENSE CONDITIONS THAT WILL BE VIOLATED**

Technical Specification (TS) 3.8.1.1.b will be violated during the period of requested enforcement discretion.

TS 3.8.1.1.b requires that the Limiting Condition for Operation (LCO) be met for the Emergency Diesel Generators (EDGs), except as provided in the associated ACTION requirements. Action b, partially states that:

“b. With one diesel generator of the above required A.C. electrical power sources inoperable, ...restore the inoperable diesel generator to OPERABLE status within 72 hours for diesel generators A or B, or within 14 days for diesel generators C or D, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.”

Since emergent repair activities are still underway, EDG “A” is inoperable. The ACTION statement associated with this TS requires the plant to be placed in HOT SHUTDOWN within 12 hours if the inoperable diesel generator cannot be restored to operable status within 72 hours.

**2. THE CIRCUMSTANCES SURROUNDING THE SITUATION, INCLUDING APPARENT ROOT CAUSES, THE NEED FOR PROMPT ACTION AND IDENTIFICATION OF ANY RELEVANT HISTORICAL EVENTS:**

At 0200 hours on January 8, 2001, “A” EDG was removed from service to perform preventive and corrective activities associated with a scheduled maintenance outage that included replacement of the air shutdown solenoid valve.

Upon the completion of these maintenance activities, the “A” EDG was run for a post-maintenance test. During the “A” EDG run the following issues were noted:

1. The voltage regulator was unable to raise or lower voltage automatically,
2. The engine driven inter-cooler pump mechanical seal leaked, and
3. The “A” EDG failed to shutdown when its normal control room stop push bottom was depressed, or when the stop push buttons on the local EDG panel and the

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local engine control panel were depressed. The EDG was stopped by manually repositioning its fuel rack, thereby stopping the flow of fuel oil.

The remaining three operable diesel generators were tested for potential common mode failures, and no issues were identified. All three remaining EDGs remain fully operable.

Discussion of the issues:

**1. Automatic Voltage Regulator**

The motor operated potentiometer (MOP) for the voltage regulator automatic mode of operation was found to have failed.

The apparent cause of the MOP failure is attributed to random component failure.

**2. Engine driven inter-cooler pump seal leak**

Leakage from the engine driven inter-cooler pump mechanical seal was identified during the post-maintenance run. The leakage was estimated to be approximately 1.5 gallons per hour. Since the EDG could not be restored to an operable condition with the pump seal in its degraded condition, corrective maintenance was expeditiously initiated to remove, replace and re-install the mechanical seal on the engine driven inter-cooler pump.

The apparent cause of the seal failure is attributed to cocking of the stationary seal face during installation due to a lack of precision and detail in the installation procedure. This misalignment of the faces from side to side created a gap of approximately .067 inches, which permitted the leakage.

**3. Failure to stop**

The "A" EDG failure to stop was attributed to a sticking shutdown solenoid. This component was replaced on January 11, 2001. The replacement solenoid was purchased over 13 years ago and was not exercised prior to use.

The apparent cause of the failure to stop is attributed to less than adequate maintenance practices.

The extent of these emergent maintenance activities and the duration of the post-maintenance testing necessitate the 48 hours of enforcement discretion from the requirements of Technical Specification 3.8.1.1.b.

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These conditions were not identified until approximately 46 hours of the planned "A" EDG outage had elapsed. Specifically, sufficient time is not available to complete the maintenance activities necessary to return the EDG to service. Therefore, the 48 hours enforcement discretion is requested.

No relevant historical events were identified that are related to the circumstances of this situation.

**3. THE SAFETY BASIS FOR THE REQUEST, INCLUDING AN EVALUATION OF THE SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES OF THE PROPOSED COURSE OF ACTION. THIS EVALUATION SHOULD INCLUDE AT LEAST A QUALITATIVE RISK ASSESSMENT DERIVED FROM THE LICENSEE'S PRA:**

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 Criteria 17 of Appendix "A" to 10 CFR 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 safety analyses and are based upon maintaining at least one of the onsite A.C. and the corresponding D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. or D.C. source.

The initial conditions of Design Basis Accident (DBA) and transient analyses in the Updated Final Safety Analysis Report (UFSAR), Chapter 6 and Chapter 15, assume Engineered Safety Feature (ESF) systems are operable. The EDGs are designed to provide sufficient capacity, capability, redundancy and reliability to ensure the availability of necessary power to ESF systems so that fuel, reactor coolant system and containment design limits are not exceeded.

Furthermore, Section 8.0 of the Hope Creek UFSAR states that the onsite 1E power system is composed of four electrically independent channels. The safety related loads are divided amongst these four channels such that the loss of any one channel will not preclude the safety functions from being performed. Any combination of three out of the

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four EDGs has the capability to provide the power to the minimum required safety loads to safely shutdown the unit and mitigate the consequences of an accident.

The remaining OPERABLE EDGs (B, C, and D) are able to mitigate the consequences of a DBA (in conjunction with a loss of offsite power (LOOP) condition); therefore, the systems, structures and components required to mitigate the consequences of an accident will remain available during the requested period of enforcement discretion.

The B, C, and D EDGs are fully operable and able to perform their safety function. The additional 48 hours of enforcement discretion being requested to allow sufficient time to complete maintenance and the required Technical Specification testing.

A Probabilistic Safety Assessment (PSA) for the current condition was performed. The calculated CDF is 1.894E-5/year. With the base line value (nominal expected equipment unavailability) of 8.661E-6/year, the delta CDF is 1.028E-5/year. This results in a risk color of GREEN.

Using the Incremental Conditional Core Damage Probability (ICCDP) criteria of 5.0E-7 established in Regulatory Guide 1.177, an allowed outage time period of 17 days is calculated. This supports a one-time AOT extension of 48 hours.

The calculated Large Early Release Frequency (LERF) is 3.765E-6/year. With the base line value (nominal expected equipment unavailability) of 1.003 E-6/year, the delta LERF is 2.762E-6/year.

Using the Incremental Conditional Large Early Release Probability (ICLERP) criteria of 5.0E-8 established in Regulatory Guide 1.177, an AOT extension of 6 days is calculated. This supports an AOT extension of 48 hours.

The assessment indicates that the increase in risk to core damage and to the public is not significant, and is well within Regulatory Guide 1.177 requirements. The basis for this judgment is the relatively short duration of the extended AOT and the continued availability of the remaining safety-related equipment (e.g., onsite AC and DC power sources, distribution systems, Emergency Core Cooling System (ECCS) components and Engineered Safety Features (ESF) systems to mitigate design basis events as described in the Hope Creek Updated Final Safety Analysis Report (UFSAR).

In addition, two offsite power sources will be maintained to maximize Hope Creek's capability to mitigate design basis event and accidents where offsite power is available.

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Adverse weather conditions that would challenge offsite power sources are not expected during the requested period of enforcement discretion.

**4. THE BASIS FOR THE LICENSEE'S CONCLUSION THAT THE NONCOMPLIANCE WILL NOT BE OF POTENTIAL DETRIMENT TO THE PUBLIC HEALTH AND SAFETY AND THAT NO SIGNIFICANT HAZARD CONSIDERATION IS INVOLVED:**

Determination of No Significant Hazards Consideration

This proposed enforcement discretion:

**Does not involve a significant increase in the probability or consequences of any accident or malfunction of equipment important to safety previously evaluated.**

During the requested 48 hours enforcement discretion period, Hope Creek safety-related systems will remain capable of performing their required safety functions. An additional 48 hours to enter HOT SHUTDOWN would not significantly increase the probability or consequences of an accident previously evaluated, since the capability of onsite AC and DC power sources, distribution systems, Emergency Core Cooling System (ECCS) components and Engineered Safety Features (ESF) systems is maintained for the enforcement discretion period. Therefore, the enforcement discretion for TS 3.8.1.1.b will not significantly increase the probability or consequences of any accident previously evaluated.

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

Although the "A" EDG will be inoperable until the required maintenance and operability testing is complete, not to exceed 48 hours pursuant to this enforcement discretion,

1. The maintenance activities associated with the engine driven inter-cooler pump mechanical seal, and the motor operated potentiometer will not result in plant operation in a manner that will create the possibility of a new or different kind of accident from any previously evaluated.

2. The completion of the required Technical Specification testing will not result in plant operation in a manner that will create the possibility of a new or different kind of accident from any previously evaluated.



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

For the duration of the requested enforcement discretion, safety-related systems will remain capable of performing their required safety functions. Sufficient safety-related equipment and systems will remain available to ensure that the consequences of design basis transients and accidents are mitigated as assumed in the Hope Creek UFSAR. Therefore, the requested enforcement discretion involves no significant reduction in the margins of safety as discussed in the bases for the Technical Specifications.

**5. THE BASIS FOR THE LICENSEE'S CONCLUSION THAT THE NONCOMPLIANCE WILL NOT INVOLVE ADVERSE CONSEQUENCES TO THE ENVIRONMENT:**

The requested enforcement discretion does not cause any increase in effluents that may be released offsite, does not involve an increase in radiation exposure to the public, and does not involve a Significant Hazards Consideration. Therefore, the request does not involve any irreversible environmental consequences.

**6. ANY PROPOSED COMPENSATORY MEASURES:**

No elective work that has the potential to adversely affect plant electrical systems will be performed during the duration of the requested enforcement discretion. Restoration and completion of the Technical Specification required testing of the "A" EDG will continue to be performed in an expeditious manner.

**7. THE JUSTIFICATION FOR THE DURATION OF THE NONCOMPLIANCE:**

The time necessary to complete the repair activities and perform the post-maintenance testing for the "A" EDG is greater than the time remaining in the 72 hour allowed outage time specified in TS 3.8.1.1.b. The additional 48 hours will provide sufficient time to complete the repair and retest activities.

Based upon the continued availability of remaining safety-related systems, the impact of the requested 48 hours extension upon core damage frequency is not significant and is well within Regulatory Guide 1.177 requirements, as described in the response to question number 3 above.

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**8. A STATEMENT THAT THE REQUEST HAS BEEN APPROVED BY THE FACILITY ORGANIZATION THAT NORMALLY REVIEWS SAFETY ISSUES (PLANT ONSITE REVIEW COMMITTEE, OR ITS EQUIVALENT):**

This request has been reviewed and approved by the Hope Creek Station Operations Review Committee.

**9. THE REQUEST MUST SPECIFICALLY ADDRESS WHICH OF THE NOED CRITERIA FOR APPROPRIATE PLANT CONDITIONS SPECIFIED IN SECTION B IS SATISFIED AND HOW IT IS SATISFIED:**

Enforcement discretion is being requested to avoid an undesirable transient (plant shutdown) as a result of forcing compliance with the license condition (72 hour allowed outage time for one inoperable EDG). Continued plant operation for up to an additional 48-hour period with the "A" EDG inoperable results in minimal potential safety consequences and reduces operational risks.

**10. IF A FOLLOW UP LICENSE AMENDMENT IS REQUIRED, THE NOED REQUEST MUST INCLUDE MARKED-UP TS PAGES AND A COMMITMENT TO SUBMIT THE ACTUAL LICENSE AMENDMENT REQUEST WITHIN 48 HOURS:**

This request is for a noncompliance of short duration. A Technical Specification change is impractical because Hope Creek will return to compliance with the existing license requirement before a license amendment could be issued.