



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
475 ALLENDALE RD, STE 102
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

February 5, 2025

EAF-RI-2025-0048

Charles McFeaters
President and Chief Nuclear Officer
PSEG Nuclear, LLC - N09
P.O. Box 236
Hancocks Bridge, NJ 08038

**SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR HOPE CREEK
GENERATING STATION (EPID: L-2025-LLD-0002)**

Dear Charles McFeaters:

By letter (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25034A230) dated February 3, 2025, Hope Creek Generating Station (PSEG, the licensee) requested the U.S. Nuclear Regulatory Commission (NRC) exercise discretion to not enforce compliance with the actions required by Hope Creek Generating Station (Hope Creek) Technical Specification (TS) Limiting Condition for Operation (LCO) 3.8.1.1 – “A.C. Sources – Operating,” action E.

The February 3, 2025, letter documents information previously discussed with the NRC in a telephone conference held on January 31, 2025, at 8:30 p.m. Eastern Standard Time (EST). PSEG requested that a Notice of Enforcement Discretion (NOED) be granted pursuant to the NRC’s policy regarding exercise of discretion for an operating power reactor, set out in the NRC Enforcement Manual, Appendix F, “Notices of Enforcement Discretion.” PSEG requested that the NOED be effective for 28 hours beyond January 31, 2025, at 9:35 p.m., which is the time the TS would have required Hope Creek to be in hot shutdown, absent discretion. The NRC verbally approved the NOED at 9:15 p.m. on January 31, 2025. The principal NRC staff members who participated in the telephone conference are listed in Enclosure 1. The NRC staff determined that the information contained in your letter requesting the NOED was consistent with your oral request.

The NRC first became aware of the potential for the NOED request on January 31, 2025, at approximately 12:00 p.m., through communication with the Hope Creek Project Manager. The events leading up to the NOED request are described below.

On January 27, 2025, at 12:00 a.m., Hope Creek declared the ‘A’ emergency diesel generator (EDG) inoperable and removed it from service for planned maintenance. TS Action 3.8.1.1.b was entered, which permitted operation for 14 days with one inoperable EDG, after verifying the availability of the supplemental power source (the allowed outage time (AOT) diesels). On January 31, 2025, at 7:35 a.m., the ‘D’ EDG was declared inoperable due to an emergent lube oil system issue. Hope Creek entered TS Actions 3.8.1.1.e and 3.8.1.1.f for two inoperable EDGs. Action 3.8.1.1.f was met; however, Action 3.8.1.1.e required restoration of one inoperable

EDG to operable status within two hours (9:35 a.m.) or be in hot shutdown within the next 12 hours (9:35 p.m.) and in cold shutdown within the following 24 hours (February 1, 2025, at 9:35 p.m.). PSEG determined that the 'A' EDG work was progressing as planned and was expected to be complete no later than February 2, 2025, at 1:00 a.m. Therefore, PSEG requested a NOED to extend the expiration of the completion time for Action 3.8.1.1.e by 28 hours to February 2, 2025, at 1:35 a.m., to allow Hope Creek additional time to return the 'A' EDG to operable.

Based on the NRC staff's evaluation of the licensee's request, we determined that granting this NOED was consistent with the NRC's Enforcement Policy and staff guidance. The NOED request met the criteria specified in NRC's Enforcement Manual, Appendix F, "Notices of Enforcement Discretion," Sections 2.2 and 2.5. Specifically, the NRC determined that it was appropriate to exercise discretion for 28 hours to avoid an unnecessary shutdown of a reactor without a corresponding benefit to public health and safety or the environment. Therefore, as communicated verbally to the licensee at approximately 9:15 p.m. EST on January 31, 2025, the NRC exercised discretion to not enforce compliance with TS Action LCO 3.8.1.1.e for the 28-hour period from January 31, 2025, at 9:35 p.m., until February 2, 2025, at 01:35 a.m. Hope Creek returned the 'A' EDG to operable status on January 31, 2025, at 9:21 p.m., and the requested and approved NOED was not utilized. It is not necessary to process a follow-up license amendment because Hope Creek returned the 'A' EDG to operable before entering the period of enforcement discretion.

As stated in the NRC Enforcement Policy, enforcement action may be taken to the extent that violations were involved for the root cause that led to the noncompliance for which this NOED was necessary.

This letter and its enclosures will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Blake D. Welling, Director
Division of Operating Reactor Safety

Docket No. 05000354
License No. NPF-57

Enclosures:

1. List of Key NRC Personnel
2. Hope Creek Request for Enforcement Discretion For Limiting Condition for Operation (LCO) 3.8.1.1, "A.C. Sources – Operating" (ML25034A230)

cc w/encls: Distribution via ListServ

SUBJECT: NOTICE OF ENFORCEMENT DISCRETION HOPE CREEK GENERATING STATION (EPID: L-2025-LLD-0002) DATED FEBRUARY 5, 2025

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<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RI/DORS	NRR/DORL	NRR/DORL	RI/DORS	
NAME	N Warnek	M Marshall	J. Pelton	B. Welling	
DATE	02/05/2025	02/04/2025	02/05/2025	02/04/2025	

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LIST OF KEY NRC PERSONNEL

NRC REGION I

B. Welling, Director, Division of Operating Reactor Safety (DORS)
R. McKinley, Deputy Director, DORS
N. Warnek, Branch Chief, DORS, Projects Branch 3
J. Bresson, Hope Creek Resident Inspector, DORS, Projects Branch 3
F. Arner, Senior Reactor Analyst, DORS
C. Bickett, Senior Reactor Analyst, DORS

Office of Nuclear Reactor Regulation

J. Pelton, Deputy Director, Division of Operating Reactor Licensing (DORL)
M. Marshall, Senior Project Manager, DORL, Plant Licensing Branch 1
E. Miller, Senior Project Manager, DORL, Plant Licensing Branch II-1
M. Kichline, Senior Reliability and Risk Analyst, Division of Risk Assessment, PRA Oversight Branch
T. Scarbrough, Senior Mechanical Engineer, Division of Engineering and External Hazards (DEX), Mechanical Engineering & Inservice Testing Branch
N. Hansing, Mechanical Engineer, DEX, Mechanical Engineering & Inservice Testing Branch
V. Goel, Senior Electrical Engineer, DEX, Electrical Engineering Branch

Limiting Condition for Operation 3.8.1.1

LR-N25-0019

February 3, 2025

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Hope Creek Nuclear Generating Station
Renewed Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Request for Enforcement Discretion For Limiting Condition for
Operation (LCO) 3.8.1.1, "A.C. Sources – Operating"

On January 31, 2025, PSEG Nuclear LLC (PSEG) requested and the U.S. Nuclear Regulatory Commission (NRC) verbally authorized enforcement discretion from compliance with Hope Creek Generating Station (Hope Creek) limiting condition for operation (LCO) ACTION 3.8.1.1.e.

Hope Creek declared the 'A' emergency diesel generator (EDG) inoperable for planned maintenance on January 27, 2025 at 00:00 with an expected return to service of February 2, 2025 at 01:00 and a required return to operable status of February 10, 2025 at 00:00 under ACTION 3.8.1.1.b.2.b).

Hope Creek emergently declared the 'D' EDG inoperable on January 31, 2025 at 07:35. Consequently, Hope Creek entered ACTION 3.8.1.1.e and f. Hope Creek satisfied the requirements of ACTION 3.8.1.1.f. However, ACTION 3.8.1.1.e required restoration of one inoperable EDG to OPERABLE status within 2 hours or be in HOT SHUTDOWN by January 31, 2025 at 21:35 and COLD SHUTDOWN by February 1, 2025 at 21:35.

PSEG requested discretion to remain at power until 'A' EDG was restored to service. Specifically, PSEG requested an additional 28 hours to remain in OPERATIONAL CONDITION 1, POWER OPERATION. PSEG planned to return the 'A' EDG to

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OPERABLE status no later than February 2, 2025 at 01:00. The requested additional allowance incorporated contingency time to address any delays in return to service and post maintenance testing. There was no net increase in radiological risk to the public as the calculated risk increase is within normal work control levels for Hope Creek.

Hope Creek commenced power reduction to comply with ACTION 3.8.1.1.e at 20:15 on January 31 and submitted event notification 57530 per 10 CFR 50.72(b)(2)(i) to report the initiation of a nuclear plant shutdown required by Technical Specifications.

Hope Creek expedited the remaining planned 'A' EDG maintenance activities; thereby returning the 'A' EDG to OPERABLE status and exiting ACTION 3.8.1.1.e. on January 31, 2025 at 21:21. When 'A' EDG returned to service, Hope Creek remained in ACTION 3.8.1.1.b for one inoperable EDG with a required expiration of February 10, 2025 at 00:00.

The enclosure provides information necessary for the notice of enforcement discretion (NOED). This information was discussed with the U.S. Nuclear Regulatory Commission (NRC) staff prior to NRC authorization of enforcement discretion on January 31, 2025.

Please contact Mr. Jason Jennings at Jason.Jennings@pseg.com if you require additional information.

There are no new commitments in this request.

Sincerely,



Robert D. McLaughlin
Plant Manager, Hope Creek Generating Station
PSEG Nuclear LLC

Enclosure: Request for Enforcement Discretion For Limiting Condition for Operation (LCO) 3.8.1.1, "A.C. Sources – Operating"

LR-N25-0019
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cc: USNRC Regional Administrator – Region 1
USNRC NRR Project Manager – Hope Creek
USNRC Senior Resident Inspector – Hope Creek
NJ Department of Environmental Protection, Bureau of Nuclear Engineering
Corporate Commitment Coordinator, PSEG Nuclear LLC

Enclosure

Hope Creek Generating Station

Docket No. 50-354

Renewed Facility Operating License No. NPF-57

**Request for Enforcement Discretion for
Limiting Condition for Operation (LCO) 3.8.1.1, "A.C. Sources – Operating"**

- 1. Explain why a licensing process is not appropriate to address the issue and why the need for a NOED could not reasonably been avoided. If applicable, this explanation shall address previous instances of the issue and decisions to pursue licensing solutions in the past.**

As a result of the emergent inoperability of the 'D' emergency diesel generator (EDG) while the 'A' EDG was removed for planned maintenance, there was insufficient time to process an emergency license amendment request prior to expiration of the Technical Specification (TS) action statement.

The need for a notice of enforcement discretion (NOED) could not reasonably be avoided because the inoperability of the emergent 'D' EDG was not anticipated. 'A' EDG was inoperable for a planned maintenance window with scheduled return to service of February 2, 2025.

- 2. Provide a description of the TSs or other license conditions that will be violated. This description shall include the time the condition was entered and when the completion time will expire.**

Hope Creek Generating Station (Hope Creek) would have violated ACTION e. of limiting condition for operation (LCO) 3.8.1.1, "A.C. Sources – Operating" which was entered on January 31, 2025 at 07:35 and would have expired on February 1, 2025 at 21:35.

LCO 3.8.1.1 requires two physically independent A.C. power circuits between the offsite transmission network (offsite power) and the onsite Class 1E distribution system and four independent diesel generators (a/k/a, EDGs). The offsite power circuits are operable. However, two of four Hope Creek EDGs were not operable as of 07:35 on January 31st.

Hope Creek declared the 'A' EDG inoperable for planned maintenance on January 27, 2025, at 00:00 with an expected return to service of February 2, 2025, at 01:00 and a required return to operable status of February 10, 2025, at 00:00 under ACTION 3.8.1.1.b.2. The requirements of meeting the 14-day extended allowed outage time (AOT) of ACTION 3.8.1.1.b.2.b continued to be met. These requirements include validating the availability of the AOT diesel generators (supplemental power source) and all other pertinent requirements associated with the extended technical specification (TS) AOT.

Hope Creek emergently declared the 'D' EDG inoperable on January 31, 2025, at 07:35. Consequently, Hope Creek entered ACTION 3.8.1.1.e and f. Hope Creek satisfied the requirements of ACTION 3.8.1.1.f. However, ACTION 3.8.1.1.e required restoration of one inoperable EDG to OPERABLE status within 2 hours or be in HOT SHUTDOWN by January 31, 2025 at 21:35 and COLD SHUTDOWN by February 1, 2025 at 21:35.

PSEG requested NRC authorization to extend the expiration of the completion time for ACTION 3.8.1.1.e by 28 hours to 01:35 on February 2, 2025. This allowed Hope Creek to remain at full power until the 'A' EDG was declared OPERABLE. Based on the original planned maintenance schedule, plus time for required post-maintenance testing and contingency time for EDG adjustments, the 'A' EDG was expected to be returned to OPERABLE status no later than 01:00 on February 2, 2025. When 'A' EDG became OPERABLE, Hope Creek remained in ACTION 3.8.1.1.b for one inoperable EDG with a required return to OPERABLE status of February 10, 2025, at 00:00. Only a minimal increase to existing radiological risk is associated with the increased exposure time as discussed in Section 7 below.

3. Provide sufficient information to demonstrate that the cause of the situation is well understood including extent of condition on other related SSCs (e.g., common cause).

Hope Creek removed the 'A' EDG for planned maintenance with a scheduled return to service of February 2, 2025, at 01:00. The work progressed as planned and was expected to be complete as early as January 31, 2025, at 22:00. In fact, the work was complete and 'A' EDG returned to OPERABLE status before entering the period of enforcement discretion.

Hope Creek declared the 'D' EDG inoperable on January 31, 2025, at 07:35. A cause for the 'D' EDG inoperability is under investigation and further planning is necessary to confidently determine the scheduled return to service for the 'D' EDG. When 'A' EDG returned to OPERABLE status, Hope Creek remained in ACTION 3.8.1.1.b for one inoperable EDG which requires a return to OPERABLE status by February 10, 2025 at 00:00.

- 4. Provide an evaluation of all safety and security concerns associated with operating outside of the TS or license conditions that demonstrates that the noncompliance will not create undue risk to the public health and safety or involve adverse consequences to the environment. This should include, as appropriate, a description of the condition and operational status of the plant, equipment that is out-of-service, inoperable, or degraded that may have risk significance, may increase the probability of a plant transient, may complicate the recovery from a transient, or may be used to mitigate the condition. This evaluation shall include potential challenges to offsite and onsite power sources and forecasted weather conditions.**

Hope Creek remained in OPERATIONAL CONDITION 1, POWER OPERATION through the period of enforcement discretion. In addition to the two EDGs, the following equipment was out of service:

- H1GQ -1B-V-503, 'B' Service Water Intake Bay Supply Fan,
- H1GQ -1B-V-504, 'B' Service Water Intake Bay Exhaust Fan,
- H1KA -10-K-107, #10 Service Air Compressor.

The additional out of service equipment did not create significant increase to plant risk and is not relied on to mitigate a loss of offsite power.

There were no forecasted weather events that could challenge the availability of offsite and onsite power sources. The site experienced mild winter conditions with forecasts of light rain and mild temperatures.

There were no security concerns associated with operating outside of the TS or license conditions. The current plant condition did not increase security risks or degrade the site security protocols.

There were no known or forecasted external events that increased the likelihood of initiating events or impact the availability of plant equipment relied upon to mitigate plant transients.

- 5. Provide a description and timeline of the proposed course of action to resolve the situation (e.g., likely success of the repairs) and explain how the resolution will not result in a different or unnecessary transient. The timeline of proposed repairs should also include all post maintenance**

tests which may be necessary prior to operability. This shall include the time period for the requested discretion and demonstrate a high likelihood of completion within the requested period of enforcement discretion. If the proposed course of action necessitates enforcement discretion greater than 72 hours, the licensee shall justify why a longer-term solution (e.g., emergency amendment) should not be processed within the duration of a 72 hour NOED.

Hope Creek removed the 'A' EDG for planned maintenance on January 27, 2025 with an originally scheduled return to service of February 2, 2025 at 01:00. The work progressed as planned, remaining work was expedited, and 'A' EDG returned to OPERABLE status on January 31, 2025 at 21:21.

The work was nearly complete with no discovery of additional corrective maintenance requirements when enforcement discretion was requested. The planning and the fact that no unanticipated conditions had been discovered was evidence that the work could be completed on or ahead of schedule. As stated above, 'A' EDG returned to OPERABLE status on January 31, 2025 at 21:21.

The EDGs are standby equipment that do not affect the likelihood of a loss of offsite power. As explained above, there were no known internal or external conditions that would impact offsite power availability. Two of four EDGs remained OPERABLE. Hope Creek also has a supplemental power source that is credited for extending the allowed outage time for a single EDG from 72 hours to 14 days for the 'A' and 'B' EDGs. The supplemental power source remained available and protected under the site risk management process and ACTION 3.8.1.1.b.2.b).

- 6. Detail and explain compensatory actions the plant has both taken and will take to reduce risk(s), focusing on both event mitigation and initiating event likelihood. Describe how each compensatory measure achieves one or more of the following:**
 - a. Reduces the likelihood of initiating events;**
 - b. Reduces the likelihood of the unavailability of redundant trains, during the period of enforcement discretion; and**
 - c. Increases the likelihood of successful operator actions in response to initiating events.**

The compensatory measures to reduce the risk during the NOED period are described below.

1. The full response team will remain in place throughout the evolution and the remaining maintenance activities will be completed utilizing 24-hour personnel coverage.
 2. The purpose for protecting equipment is to minimize plant risk. This involves limiting or prohibiting operation or maintenance of plant equipment when SSCs are made unavailable. For the duration of the 'A' and 'D' EDG inoperability, PSEG will avoid testing and maintenance that could impact the 'B' and 'C' EDGs or equipment powered by the 'B' and 'C' EDGs.
 3. Posting protected train signs for all protected equipment including but not limited to: 'B' and 'C' EDGs, Switchgear & 1E Logic; 'A' and 'C' core spray; 'A' control room emergency filtration (CREF); and automatic depressurization system (ADS).
 4. Enhanced operator sensitivity to safety bus electrical power supply issues to recognize and respond expeditiously to a station blackout event or loss of offsite power (e.g., posting of protected train signage).
 5. Every crew prior to taking the watch will review the alarm response to loss of Emergency Diesel Generator and associated loads.
 6. Increased monitoring of the availability of the AOT diesel.
 7. During this maintenance window the station will not allow or authorize any transient combustible permits. All hot work has been suspended.
 8. During this maintenance window, no additional surveillance testing, or maintenance shall be performed that is not related to the specified equipment.
- 7. Demonstrate that the NOED condition, including compensatory measures will not result in more than a minimal increase in radiological**

risk, either in quantitative assessment that the risk will be within the normal work control levels (ICCDP less than or equal to $5E-7$ and/or ICLERP less than or equal to $5E-8$) or in a defensible qualitative manner. Further guidance is provided in Section 2.6.

As described below, the NOED condition, including compensatory measures does not result in more than a minimal increase in radiological risk. The assessment includes quantifiable internal fire risk scenarios.

Incremental core damage probability (ICCDP) for the additional 28 hours is below $5E-07$ at $3.0E-07$. This includes increase attributable to full power internal events (FPIE) and internal fire (FPRA).

Incremental large early release probability (ICLERP) for the additional 28 hours is below $5E-08$ at $3.7E-08$. This includes increase attributable to full power internal events (FPIE) and internal fire (FPRA).

- 8. Confirm that the facility organization that normally reviews safety issues has reviewed and approved this request and that a written NOED request will be submitted within two working days, excluding licensee holidays, of the NRC staff's decision regarding the NOED.**

The PSEG fleet review committee (FRC) approved this request before PSEG requested enforcement discretion for this matter from the NRC.

The discussion with the licensee should also cover whether it is appropriate for a follow-up amendment to be submitted following the NOED. Agreement on this point is not necessary to issue enforcement discretion but may factor into future NRC decision-making if the issue recurs.

It is not necessary to process a follow-up amendment following the NOED because PSEG returned the 'A' EDG to OPERABLE status before entering the period of enforcement discretion.

- 1. Use the zero maintenance PRA model to establish the plant's baseline risk and the estimated risk increase associated with the period of**

enforcement discretion. For the plant-specific configuration the plant intends to operate in during the period of enforcement discretion, the ICCDP and ICLERP should be quantified and compared with guidance thresholds of less than or equal to an ICCDP of $5E-7$ and an ICLERP of $5E-8$. These numerical guidance values are not pass-fail criteria. For the degraded case with the subject equipment out-of-service, the model should reflect, as best as possible, current equipment unavailability states (i.e., if other equipment is unavailable because of concurrent testing and maintenance, this should also be reflected in the analysis). This risk calculation should not be limited to the specific TS relief in question, but rather, the total risk of continued operation for the specific configuration of the plant.

The baseline FPIE CDF using the zero test and maintenance PRA model is $3.96E-06$ /yr. The ICCDP associated with an additional 28 hours is $1.1E-08$, which is below the $5E-07$ threshold established by IMC 0410.

The baseline FPIE LERF using the zero test and maintenance PRA model is $2.91E-07$ /yr. The ICLERP associated with an additional 28 hours is $1.2E-09$, which is below the $5E-08$ threshold established by IMC 0410.

There is no net increase in radiological risk to the public as the calculated risk increase is within Hope Creek's normal work control levels.

- 2. Discuss the dominant risk contributors (cut sets or sequences or both) and summarize the risk insights for the plant-specific configuration the plant intends to operate in during the period of enforcement discretion. This discussion should focus primarily on risk contributors that have changed (increased or decreased) from the baseline model because of the degraded condition and resultant compensatory measures, if any.**

An examination of the dominant risk contributors that increased as a result of this NOED condition was performed. The dominant risk contributor for the proposed plant configuration is the loss of offsite power initiating event. A potential compensatory action would be to evaluate expected weather conditions and grid stability in an effort to minimize the risk of this initiating event. The dominant random failure events include failure of the AOT diesel generator, either via hardware failure or operator failure. The PRA analysis

does not assume that the AOT diesel generator (DG) is pre-aligned. However, prior to entering the extended AOT for the 'A' EDG, and every 12 hours thereafter per TS 3.8.1.1.b.2.b, the LCO requirements direct station personnel to verify the AOT DG is available. Secondary risk contributors to the plant-specific configuration include failure of the 'B' and 'C' EDGs, or other 'B' train equipment that renders the 'B' electrical channel unavailable.

Certain compensatory measures are accounted for in the PRA analysis, primarily the protection of 'B' and 'C' EDGs and availability of the AOT DG for use by Hope Creek.

A comparison of top delta LERF cutsets for the plant-specific configuration to the zero test and maintenance (ZTM) base case shows similar dominant risk contributors to that of the top delta CDF cutsets.

3. Discuss how the compensatory measures are accounted for in the PRA. These modeled compensatory measures should be correlated, as applicable, to the dominant PRA sequences identified in items 1 and 2 above. It is understood that measures not directly related to the out-of-service equipment may be implemented to reduce overall plant risk and, as such, should be explained. Compensatory measures that cannot be modeled in the PRA shall be assessed qualitatively.

Hope Creek will perform the following compensatory actions:

- Protected equipment:
 - 'B' and 'C' EDGs
 - 'B', 'C', and 'D' 4kV 1E Switchgear
 - 'B' Core Spray Loop
 - 'B' FRVS Vent Fan
 - 'B', 'C', 'D', and 'F' FRVS Recirc Fans
 - HPCI
 - RCIC
- AOT DG actions as required by OP-AA-108-116

Excluding the 'B' and 'C' EDGs and availability of the AOT DG for use by Hope Creek, the other additional protected equipment and compensatory measures are not accounted for in the PRA. Additional risk management actions may be developed and implemented by station management.

- 4. Discuss the “extent of condition” of the failed or unavailable component(s) to other trains or divisions of equipment and the adjustments, if any, which were made to the related PRA common cause factors to account for potential increases in their failure probabilities. The method used to determine the extent of condition shall be discussed. It is recognized that a formal cause or apparent cause is not required because of the limited time available in determining the acceptability of a requested NOED. However, a discussion of the likely cause shall be provided with an associated discussion of the potential for common cause failure.**

Given the ‘A’ EDG was unavailable due to planned maintenance, and the issues affecting the ‘D’ EDG have not been observed on the ‘B’ or ‘C’ EDGs, no further extent of condition or common cause failure changes were made to the PRA models. The lube oil system has been verified to be functioning correctly. The available indications on the ‘B’ and ‘C’ EDGs provide assurance that common cause failures are not a concern.

- 5. Discuss “external event risk” for the specified plant configuration. External events include fire (internal and external), external flooding, seismic, high winds, tornado, transportation, other nearby facility accidents. An example of external event risk is a situation in which a reactor core isolation cooling (RCIC) pump has failed and a review of the licensee’s Individual Plant Examination of External Events or full-scope PRA model identifies that the RCIC pump is used to mitigate CDF and LERF in certain fire scenarios. Action may be taken to reduce fire ignition frequency in the affected areas and to reduce human error associated with time-critical operator actions in response to such scenarios, and to ensure fire protective and corrective measures have been taken.**

Fire

The FPRA model was quantified using a modified version of the FPIE flag file that included fire-specific failures (i.e., versions of events that end with –FIE or –RSP).

The baseline FPRA CDF using the zero test and maintenance PRA model is 1.21E-05/yr. The ICCDP associated with an additional 28 hours is 2.9E-07, which is below the 5E-07 threshold established by IMC 0410.

The baseline FPRA LERF using the zero test and maintenance PRA model is 1.22E-06/yr. The ICLERP associated with an additional 28 hours is 3.5E-08, which is below the 5E-08 threshold established by IMC 0410.

Top CDF cutsets involve fire scenarios that fail 'B' train equipment, such as hot gas layer events in AB2 (the Division 2 corridor between the Reactor and Control Buildings) and severe fires in CD61 (the upper equipment room) and switchgear room failures that involve operator failures to align AOT and FLEX diesels. Top scenarios that impact just offsite power also occur due to a failure of EDG A and EDG D combined with the failure of SW ventilation fan B, which leads to a long term failure of Division II power. In addition to the direct fire impacts, the top CDF cutsets are dominated by failures of the AOT diesel to be aligned or successfully run for 24 hours.

Top LERF cutsets are very similar to CDF, but weigh fire scenarios that impact LOSP-only more heavily. The AOT diesel is also even more important in these cutsets, with a failure of the AOT diesel (either fails to run or operators fail to align) contributing to approximately 90% of the total LERF value.

Seismic

There is no quantitative Seismic PRA Model of Record for Hope Creek. An analysis of seismic risk was performed as part of the Hope Creek IPEEE. The IPEEE is used as the basis in performing a qualitative analysis of seismic risk.

Random equipment failures following a seismically induced LOP, which result in core damage (scenarios SDS-18 (S-OP)), are dominated by EDG failures. These scenarios result in station blackout and contribute approximately 4% of seismic risk. The increase in risk from the temporary extended AOT is expected to be similar to that of internal events and fire risk given only the 'A' and 'D' EDGs are unavailable, but the AOT EDGs will be available IAW Tech Spec requirements. In addition, each emergency diesel generator unit is seismically qualified and the Class 1E switchgear, unit substations (USSs), motor control centers (MCCs), and control and power distribution panels for redundant load groups are in separate Seismic Category I rooms. These components would not be included in any seismic initiators, as the initiators are limited to tectonic movement.

In addition, it should be noted that prior to the expiration of the original AOT, the 'A' EDG was declared available by operations staff, and while not operable, the EDG would be expected to perform its PRA function. It is reasonable to assume that the change in risk due to temporarily increasing this AOT would be similar or less than the increase in risk from internal events or fire. Since the internal events and fire PRA

analyses resulted in an acceptable increase for this temporary AOT extension, it is reasonable to estimate an acceptable increase in risk from seismic events.

High Winds, Floods, and other External Events

The Hope Creek IPEEE states that no plant-unique external event is known that poses a significant threat of severe accidents and that Hope Creek is not vulnerable to other external events..