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

Subject: Brunswick Steam Electric Plant, Unit No. 2
Renewed Facility Operating License No. DPR-62
Docket Nos. 50-324
Request for Notice of Enforcement Discretion (NOED)
Limiting Condition for Operation (LCO) 3.0.3 per Technical Specification 3.8.1, *AC Sources – Operating*

Ladies and Gentlemen:

This letter documents the background and technical information supporting the Duke Energy Progress, Inc., request for a Notice of Enforcement Discretion (NOED) associated with entry into Limiting Condition for Operation (LCO) 3.0.3 as directed by Technical Specification (TS) 3.8.1, *AC Sources – Operating*, for the Brunswick Steam Electric Plant (BSEP), Unit No. 2. This submittal fulfills the requirement that a written NOED request be submitted to the NRC within two working days following NRC verbal approval of the NOED.

The NOED request was discussed with the NRC during a teleconference held on March 4, 2016. The NRC verbally approved the NOED at 1535 hours Eastern Standard Time (EST). During this call, the NRC agreed that a follow-up license amendment request is not necessary.

On March 4, 2016, at 1235 hours EST, Unit 2 entered TS 3.8.1, Condition I (i.e., one or more offsite circuits and two or more DGs inoperable). This was a result of ongoing planned maintenance impacting operability of Emergency Diesel Generator 1 (EDG 1), Emergency bus E1, and balance of plant (BOP) bus 1D combined with unplanned inoperability of EDG 3 due to a broken fuse block connection on the auto-start circuitry for EDG 3. Required Action I.1 directed immediate entry into Limiting Condition for Operation (LCO) 3.0.3. Without enforcement discretion, action must be initiated within 1 hour to place Unit 2 in Mode 2 within 7 hours (i.e., by March 4, 2016, at 1935 hours EST), Mode 3 within 13 hours (i.e., by March 5, 2016 at 0135 hours EST), and Mode 4 within 37 hours (i.e., by March 6, 2016, at 0135 hours EST). The NOED extended the time required by LCO 3.0.3 to be in Mode 2 from 7 hours to 24 hours (i.e., by 17 hours). The 17 hour Mode 3 and Mode 4 entries were extended by 17 hours as well.

On March 4, 2016, at 1834 hours EST, EDG 3 was restored to operable status and LCO 3.0.3 was exited. This was before the original time allowance of LCO 3.0.3 (i.e., be in Mode 2 by

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March 4, 2016, at 1935 hours EST). Therefore, the NOED was not needed to avoid Unit 2 shutdown but was used to avoid down power of Unit 2.

This document contains no new regulatory commitments.

Please refer any questions regarding this submittal to Mr. Lee Grzeck, Manager - Regulatory Affairs, at (910) 457-2487.

Sincerely,

William R. Gideon

MAT/mat

Enclosure:

Request for Notice of Enforcement Discretion (NOED), Limiting Condition for Operation (LCO) 3.0.3 per Technical Specification 3.8.1, *AC Sources – Operating*

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Request for Notice of Enforcement Discretion (NOED), Limiting Condition for Operation (LCO) 3.0.3 per Technical Specification 3.8.1, *AC Sources – Operating*

Background Information

Brunswick Steam Electric Plant (BSEP) Unit 2 is currently operating at approximately 100% of rated thermal power. Unit 1 began a refueling outage on February 26, 2016, and is currently in Mode 5 (i.e., Refuel).

On March 2, at 1458 hours Eastern Standard Time (EST), Emergency Diesel Generator 1 (EDG 1) was declared inoperable in support of modifications, maintenance activities and testing. Emergency bus E1 and balance of plant (BOP) bus 1D were deenergized in support of this work. Due to the shared electrical distribution system at Brunswick, Unit 2 entered Technical Specification (TS) 3.8.1, Condition B (i.e., two Unit 1 offsite circuits inoperable due to one Unit 1 balance of plant circuit path to the downstream 4.16 kV emergency bus inoperable for planned maintenance and the EDG associated with the affected downstream 4.16 kV emergency bus inoperable for planned maintenance). The Completion Time to restore both Unit 1 offsite circuits and EDG to operable status is 7 days.

On March 3, work was ongoing to restore power to BOP bus 1D when an error in the restoration sequence resulted in an invalid auto-start of EDGs 2 and 4. The invalid signal mimicked undervoltage on the startup auxiliary transformer (SAT), which is not a Technical Specification required start and, per design, would have started EDGs 1, 2, 3, and 4. EDG 1 was still under clearance and, as such, did not start. However, it was also expected that EDG 3 should have started. Thorough modification (i.e., EDG 1 modification) review and troubleshooting activities were initiated and on March 4, 2016, at 1235 hours EST, it was determined that a broken fuse block connection on the auto-start circuitry for EDG 3 had failed. Failure of this connection prevents TS required auto-actuation of EDG 3. Therefore, EDG 3 was declared inoperable. At this time, Unit 2 entered TS 3.8.1, Condition I, one or more offsite circuits and two or more Diesel Generators (DGs) inoperable. Required Action I.1 directs immediate entry into LCO 3.0.3.

At the time of this NOED request, EDG 1 and emergency bus E1 remain unavailable. The BOP bus 1D has been reenergized.

Need for Enforcement Discretion

Currently, EDG 3 is scheduled to be restored to operable status by 0035 hours EST on March 5, 2016. Without enforcement discretion, action must be initiated within 1 hour to place Unit 2 in Mode 2 within 7 hours (i.e., by March 4, 2016, at 1935 hours EST), Mode 3 within 13 hours (i.e., by March 5, 2016, at 0135 hours EST), and Mode 4 within 37 hours (i.e., by March 6, 2016, at 0135 hours EST).

Based on this schedule, and to account for potential further delays, Duke Energy requests that the time required by LCO 3.0.3 to be in Mode 2 be extended from 7 hours to 24 hours and that subsequent Mode 3 and Mode 4 entries be extended by 17 hours as well. This will ensure adequate time for testing and an orderly and controlled return of EDG 3 to operable status.

Enforcement discretion is needed to avoid an unnecessary Unit 2 shutdown without a commensurate benefit in nuclear safety. NRC Inspection Manual Chapter (IMC) 0410, *Notices*

of Enforcement Discretion, indicates that, whenever possible, licensees should request an emergency license amendment in accordance with 10 CFR 50.91 rather than enforcement discretion. The guidance also indicates that the NRC will consider enforcement discretion requests on a case-by-case basis.

This NOED request involves an unanticipated temporary noncompliance with LCO 3.0.3.

Basis for Enforcement Discretion

Duke Energy performed a risk-informed evaluation demonstrating the risk associated with continued operation for an additional 17 hours is within the plant's normal risk management controls. The requested enforcement discretion will not result in more than a minimal increase in radiological risk to the public, nor will there be an adverse impact on the environment. Normal work control risk management impact, expressed in terms of incremental core damage probability and large early release probability, are specified in industry and NRC guidance on configuration risk management. Conclusions of the risk-informed analysis are included below as the safety basis for the request, which includes an evaluation of the safety significance and potential consequences of the proposed course of action.

The following provides the information, described in NRC IMC 0410, required to be included in requests for enforcement discretion.

1. Type of NOED being requested, which of the NOED criteria is satisfied, and how it satisfied those criteria. (IMC 0410, Attachment 1, 07a)

The requested enforcement discretion is not associated with a natural event. A regular NOED is requested. Enforcement discretion is required to avoid an unnecessary shutdown of Unit 2 without a corresponding health and safety benefit. NOED Criterion 03.03.b is satisfied by avoiding an unnecessary Unit 2 shutdown and, thus, minimizing potential safety consequences and operational risks as a result of compliance with LCO 3.0.3.

2. TS or license condition that will be violated. (IMC 0410, Attachment 1, 07b)

The following TS Completion Time will be violated.

> On March 4, 2016, at 1235 hours EST, Unit 2 entered TS 3.8.1, Condition I, Required Action I.1. Required Action I.1 directs immediate entry into LCO 3.0.3. The requested enforcement discretion extends each of the times required to be in Modes 2, 3, and 4 by 17 hours, as follows.
>
> > Mode 2 within 24 hours (i.e., by March 5, 2016, at 1235 hours EST)
> >
> > Mode 3 within 30 hours (i.e., by March 5, 2016, at 1835 hours EST)
> >
> > Mode 4 within 54 hours (i.e., by March 6, 2016, at 1835 hours EST)

3. Description of the circumstances, including: likely causes; the need for prompt action; the action taken to avoid the need for a NOED; and any relevant historical events. (IMC 0410, Attachment 1, 07c)

Duke Energy is in the process of upgrading the EDGs at Brunswick. On March 2, 2016, at 1458 hours EST, EDG 1 was declared inoperable in support of modifications, maintenance activities

and testing. Emergency bus E1 and BOP bus 1D were deenergized in support of this work. Due to the shared electrical distribution system at Brunswick, Unit 2 entered TS 3.8.1, Condition B (i.e., two Unit 1 offsite circuits inoperable due to one Unit 1 balance of plant circuit path to the downstream 4.16 kV emergency bus inoperable for planned maintenance and the EDG associated with the affected downstream 4.16 kV emergency bus inoperable for planned maintenance). The Completion Time to restore both Unit 1 offsite circuits and EDG to operable status is 7 days.

On March 3, 2016, work was ongoing to restore power to BOP bus 1D when an error in the restoration sequence resulted in an invalid auto-start of EDGs 2 and 4. The invalid signal mimicked undervoltage on the SAT, which is not a Technical Specification required start. Per design, it was expected that this invalid signal would have started EDGs 1, 2, 3, and 4. EDG 1 was still under clearance and, as such, did not start. However, it was expected that EDG 3 should have started. Thorough modification (i.e., EDG 1 modification) review and troubleshooting activities were initiated, and on March 4, 2016, at 1235 hours EST, it was determined that a broken fuse block connection on the auto start circuitry for EDG 3 had failed. Failure of this circuitry prevents TS required auto-actuation of EDG 3. Therefore, EDG 3 was declared inoperable. At this time, Unit 2 entered TS 3.8.1, Condition I (i.e., one or more offsite circuits and two or more DGs inoperable). Required Action I.1 directs immediate entry into LCO 3.0.3.

The cause of the EDG 3 failure to start has been determined to be a broken fuse block connection on the auto start circuitry for EDG 3. The necessary replacement fuse block is available onsite and the replacement is ongoing. However, this replacement and completion of post-maintenance testing to restore EDG 3 operability is expected to take approximately 12 hours. EDG 3 is currently scheduled to be restored to operable status at 0035 hours EST on March 5, 2016.

Brunswick does not have a history of failures associated with fuse blocks. This same connection within the auto-start circuitry for EDGs 2 and 4 was validated with this invalid auto-start signal. EDG 1 auto start circuitry will be tested by the post modification testing at the completion of its modification window. EDGs 1, 2, 3, and 4 each received and auto started during the loss of offsite power (LOOP) experienced on February 7, 2016.

The requested enforcement discretion extends each of the LCO 3.0.3 required times to be in Modes 2, 3, and 4 by 17 hours.

There was no reasonable action that Duke Energy could have taken to avoid the need for this enforcement discretion request. This AC Division 1 maintenance window for maintenance and testing was planned to restore EDG 1, emergency bus E1, and BOP bus 1D to operable status within the existing 7-day Completion Time. This work was being pursued on a 24 hour basis and supported by the continually staffed Outage Control Center. The unexpected failure of the EDG 3 fuse block connection resulted in the Unit 2 LCO 3.0.3 entry.

There have been no NOEDs, Emergency Amendment Requests, or Exigent Amendment Requests, associated with the EDGs, submitted by Brunswick in the last 10 years. The last Brunswick NOED (i.e., ADAMS Accession No. ML13107B507) was approved by the NRC on April 17, 2013, and it dealt with extending the Completion Times associated with Division II emergency buses to address a degraded condition identified on the E8 power transformer.

4. Cause of the situation that has led to the NOED request. (IMC 0410, Attachment 1, 07d)

As discussed in response to Item 3, the cause for the Unit 2 LCO 3.0.3 entry is a broken fuse block connection on the auto start circuitry for EDG 3. Contingency work orders were developed during troubleshooting activities to facilitate repair of EDG 3 if it were to become necessary. The necessary replacement fuse block is onsite, and replacement efforts are currently in progress.

Given this sequence of events, the need for this enforcement discretion could not have reasonably been anticipated or avoided.

5. Course of action to resolve the situation until the situation no longer warrants a NOED. (IMC 0410, Attachment 1, 07e)

A detailed work plan was developed to return the EDG 3 to operable status. The fuse block replacement is in progress and is being controlled through the Outage Control Center.

Post-maintenance testing is being controlled in accordance with work instructions in work order 20061937. Post-maintenance testing will consist of continuity checks. The following timeline provides the major sequence of events necessary to return EDG 3 to operable status.

Date/Time	Event
March 4, 2016, by 2035 hours EST	Complete fuse block replacement
March 4, 2016, by 2335 hours EST	Complete post-maintenance testing
March 5, 2016, by 0035 hours EST	EDG 3 restored to operable status

6. Demonstrate that the resolution itself does not result in a different, unnecessary transient. (IMC 410, Attachment 1, 07f)

The above activities will not result in any transient. EDG 3 will be restored to its design condition and will undergo post-maintenance testing, in accordance with existing plant procedures. The testing will not result in any change in status of other plant systems.

7. Demonstration that there was insufficient time to process an emergency TS or license amendment or that a license amendment is not needed. (IMC 0410, Attachment 1, 07g)

On March 2, 2016, at 1458 hours EST, EDG 1 was declared inoperable in support of modifications, maintenance activities and testing. Emergency bus E1 BOP and bus 1D were deenergized in support of this work. Due to the shared electrical distribution system at Brunswick, Unit 2 entered TS 3.8.1, Condition B. On March 3, 2016, at 1332 hours EST, work was ongoing to restore power to BOP bus 1D when an error in the restoration sequence resulted in an invalid auto-start of EDGs 2 and 4. This prompted investigations to determine why EDG 3 did not start and if, in fact, it should have started. On March 4, 2016, at 1235 hours EST, it was determined that a broken fuse block connection on the auto start circuitry for EDG 3 had failed. Failure of this fuse block prevents TS required auto-actuation of EDG 3. Therefore, EDG 3 was declared inoperable. At this time, Unit 2 entered TS 3.8.1, Condition I (i.e., one or more offsite circuits and two or more DGs inoperable). Required Action I.1 directs immediate entry into LCO 3.0.3. This sequence of events precluded pursuit of an emergency amendment. The additional LCO time requested will provide for adequate time to replace the fuse block and post-maintenance testing.

8. Condition and operational status of the plant, including safety-related equipment out of service or otherwise inoperable, and nonsafety-related equipment that is degraded or out of service that may have risk significance and that may increase the probability of a plant transient or may complicate the recovery from a transient or may be used to mitigate the condition. (IMC 0410, Attachment 1, 07h)

During the period of the proposed enforcement discretion, Unit 2 will be in Mode 1 and Unit 1 will remain in Mode 5. EDG 2, EDG 4, and offsite power sources (i.e., excluding offsite power to emergency bus E1) are not affected by the EDG 3 maintenance and are operable. No Unit 2 safety-related equipment, affecting this enforcement discretion request, is inoperable. The 4 kV bus E-1 and associated 480 V bus E5 are scheduled to be energized by 2400 hours EST on March 4, 2016. The Supplemental Diesel Generator (SUPP-DG), installed to support a 14-day completion time for an inoperable EDG, is available, as well as the two permanently installed FLEX diesels. The SUPP-DG is rated at 4000 kW, 4160 VAC, and can be connected to the emergency busses in approximately 1 hour. Each FLEX diesel is rated at 500 kW, 480 VAC, and can be connected to the emergency busses in less than one hour. Except for the periods of time for repair activities and post-repair testing, EDG 3 is available via manual start.

9. Period for the NOED, including a justification for the duration of the noncompliance. (IMC 0410, Attachment 1, 07i)

On March 4, 2016, at 1235 EST, Unit 2 entered TS 3.8.1, Condition I (i.e., one or more offsite circuits and two or more DGs inoperable). Required Action I.1 directs immediate entry into LCO 3.0.3. The requested enforcement discretion extends each of the times required to be in Modes 2, 3, and 4 by 17 hours, as follows.

Mode 2 within 24 hours (i.e., by March 5, 2016, at 1235 hours EST)

Mode 3 within 30 hours (i.e., by March 5, 2016, at 1835 hours EST)

Mode 4 within 54 hours (i.e., by March 6, 2016, at 1835 hours EST)

As demonstrated in Item 13, the requested enforcement discretion will not result in more than a minimal increase in risk. In addition to the risk insights, sufficient onsite emergency AC power and offsite power supplies remain available to complete their intended safety function. Appropriate plant redundant and support systems will be considered as protected systems to ensure there is no undue risk of redundant or support equipment inoperability during the proposed enforcement discretion time frame.

There is no significant difference in nuclear safety risk by extending the LCO 3.0.3 shutdown times to accomplish required testing. The change in risk is consistent with the normal work control practices. Additionally, there is an inherent safety benefit of restoring EDG 3 without shutting down Unit 2, when compared to shutting Unit 2 down without EDG 3 available. Therefore, requiring this EDG repair and testing to be performed with Unit 2 shutdown would result in additional plant equipment and personnel challenges without any significant benefit to the safety of the plant or the health and safety of the public.

10. Compensatory measures the plant has both taken and will take to reduce the risk associated with the specified configuration. (IMC 0410, Attachment 1, 07j)

Consistent with procedure 0AP-025, *BNP Integrated Scheduling*, the following compensatory measures were implemented. They will remain in place during the period of enforcement discretion.

- The supplemental diesel generator (SUPP-DG) is being protected, as defense-in depth, during the duration of the NOED.
- Component testing or maintenance of safety systems in the available off-site power systems and important non-safety equipment in the available off-site power systems which can increase the likelihood of a plant transient or LOOP are being avoided during the duration of the NOED.
- No discretionary switchyard maintenance is allowed during the duration of the NOED.
- Weather conditions were evaluated. Personnel will monitor weather forecasts each shift during the the duration of the NOED. If severe weather or grid instability is expected, station managers will assess the conditions and determine the best course for returning the EDG to an operable status.
- The High Pressure Coolant Injection (HPCI) pump, Reactor Core Isolation Cooling (RCIC) pump, Core Spray (CS) Pumps, and the Residual Heat Removal (RHR) pumps associated with the operable EDGs will be protected and will not be removed from service for elective maintenance activities during the requested NOED. No redundant required features supported by TS 3.8.1 would be taken out of service during the NOED period.

The SUPP-DG is available. Supplemental diesel availability requires that:

1. The load test has been performed within 30 days of entry into the extended Completion Time.
2. The supplemental diesel fuel tank test is verified locally to be greater than or equal to a 24-hour supply; and
3. SUPP-DG supporting system parameters for starting and operating are verified to be within required limits for functional availability (e.g., battery state of charge, starting air system pressure).

11. Status and potential challenges to offsite and onsite power sources, including any current or planned maintenance in the distribution system and any current or planned maintenance to the emergency diesel generators. (IMC 0410, Attachment 1, 07k)

EDG 2, and EDG 4 and offsite power sources are not affected by the EDG 3 maintenance and are operable and protected. There are no foreseen challenges to the available offsite and onsite power sources. Measures are being implemented to prevent any maintenance activities on systems in the plant that could impact the Unit 2 AC power system. During the NOED period, there will be no work performed which could impact cross-ties between the Units. The load dispatcher confirmed that there are no operations on the grid that would present a challenge to the offsite power system to the BSEP site during the duration of the NOED. Compensatory measures have been implemented to prevent any work activities in the plant that could challenge the availability and reliability of redundant systems.

The weather forecast for the duration of the requested enforcement discretion does not present a threat to offsite power.

12. Safety basis for the request and an evaluation of the safety significance and potential consequences of the proposed course of action. (IMC 0410, Attachment 1, 07l)

The planned resolution is to complete the repair and testing necessary to restore EDG 3 to operable status. This will be accomplished via existing plant work control processes, which have been successfully implemented in the past. This action will not result in a different, unnecessary transient.

As demonstrated in Item 13, the requested enforcement discretion will not result in more than a minimal increase in risk. There are no foreseen challenges to the available offsite and onsite power sources. Measures have been implemented to prevent any maintenance activities on systems in the plant that could impact the AC power system. Compensatory measures have been implemented to prevent any work activities in the plant that could challenge the availability and reliability of redundant systems. There is no significant difference in nuclear safety risk by extending the LCO 3.0.3 shutdown times to accomplish required testing. Additionally, there is an inherent safety benefit of restoring EDG 3 without shutting down Unit 2, when compared to shutting down Unit 2 without EDG 3 available.

In addition to the risk insights, sufficient onsite emergency AC power and offsite power supplies remain available to complete their intended safety function. Appropriate plant redundant and support systems will be considered as protected systems to ensure there is no undue risk of redundant or support equipment inoperability during the proposed enforcement discretion time frame.

Based on the above, granting the proposed enforcement discretion will not adversely impact plant nuclear safety.

13. Demonstration that the NOED condition, along with any compensatory measures, will not result in more than a minimal increase in radiological risk, either in a quantitative assessment that 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 defensible qualitative evaluation. (IMC 0410, Attachment 1, 07m)

The PRA quantitative and qualitative risk evaluation demonstrates that the proposed duration of the enforcement discretion will not result in more than a minimal increase in radiological risk and that risk increases are well within the normal work control levels (i.e., Incremental Conditional Core Damage Probability (ICCDP) less than or equal to 5E-7 and/or Incremental Conditional Large Early Release Probability (ICLERP) less than or equal to 5E-8). The table in the Conclusion section of this discussion summarizes the ΔICCDP and ΔICLERP results.

The analysis for Core Damage Frequency (CDF) risk impact of delaying the Unit 2 shutdown used the zero maintenance model for Unit 2. With Brunswick Unit 1 in a refueling outage, no additional risk for Unit 1 was quantified or included in the results. The fire CDF risk results and insights were developed for EDG 1 and EDG 3 unavailable with Unit 2 assumed in operation and Unit 1 in an outage. In a similar fashion, a bounding ICLERP of a factor of ten below ICCDP will be used to report results.

Per NRC guidance a common cause impact was included using Common Cause Factors (CCFs) applied to the failure to start events for EDG 2 and EDG 4.

No other significant equipment outages related to Unit 2 are reported, other than EDGs 1 and 3 are out of service and bus E1 is unavailable.

The Unit 2 reactor trip frequency was adjusted (i.e., increased x10 per ERAT Procedure) to provide a conservative estimate of the impact of the refueling outage maintenance work occurring on Unit 1.

External Events

Further evaluation was performed to consider external events. Of those external hazards, fire events were found to be the most pertinent to evaluating the risk increase of having EDG 1 and EDG 3 unavailable. The evaluation of the potential risk increase from these external events follows.

Fire Events

The potential increase in risk from internal plant fires with EDG 1 and EDG 3 out of service was evaluated using the BSEP Fire PRA (FPRA) model that was developed in support of the NFPA 805 program. The fire model was modified to remove plant modifications credited in the NFPA 805 License Amendment Request but have yet to be installed. The Supplemental Diesel provides additional defense in depth for fire events.

Seismic

Contributions to the delta CDF from seismic events were considered. The risk from seismic induced LOOP is increased for low seismic accelerations with random failures of the AC power system, but the increase is insignificant when compared to loss-of-offsite-power risk. For higher seismic accelerations, risk is not increased during the extended outage period because the complementary electrical buses in service have the same vulnerabilities as EDG 1 and EDG 3 related buses.

External Flooding

The potential increase in risk from external flooding while EDG 1 and EDG 3 are unavailable is considered negligible due to plant design and surrounding topography. For BSEP, the evaluated causes of external flooding are hurricanes. Currently there are no external flooding threats for BSEP.

High Winds

The potential increase in risk from High Winds during the exposure period is considered negligible due to plant design and the weather during the exposure period. Currently there are no threats in the Atlantic and weather across the East Coast. Hurricane season begins June 1, 2016.

Transportation/Nearby Facility Accidents

The potential increase in risk from transportation accidents or nearby facility accidents due to having EDG 1 and EDG 3 unavailable was qualitatively considered and determined to be negligible.

Risk Insights

The primary sequences of the faulted case are dominated by loss of off-site power. The cross-tie between E2 and E4 is particularly significant in these cases. These failures lead to loss of Emergency Core Cooling Systems (ECCS). Further failures of the supplemental backup injection sources such as RCIC lead to a sequence failure.

Accordingly, maintain protection of EDGs 2 and 4 and the E2-to-E4 cross-tie as well as the Supplemental Diesel Generator and Offsite power sources. The Supplemental Diesel should be aligned to the emergency bus as needed, and procedures for manually starting EDG 3 and the procedure to implement the E2-to-E4 cross-tie should be briefed.

Fire in the cable spread room, followed by fires in the control room are the highest contributors to core damage from Fire. Fires in the B battery rooms become highly risk significant for this condition. An hourly fire watch in the battery rooms should be maintained during this period.

Suggestions for Defense in Depth based on Risk Insights

The following actions have been completed. The quantitative analysis does not included any of these compensatory measures or defense in depth actions.

- Protected equipment: The E2-to-E4 cross-tie, offsite power sources, operable EDGs, DC Generators, the supplemental diesel generator (SUPP-DG), High Pressure Coolant Injection system, Reactor Core Isolation Cooling, and Residual Heat Removal pumps associated with the operable EDGs.

Conclusions

The ICCDP and ICLERP results calculated for both internal events, internal flooding and fire events are shown below. These results can be compared against the NOED thresholds and, as discussed, are well within the NOED guidance threshold.

Parameter	1 Day Extension	NOED Threshold
ICCDP	4E-7	**5E-7**
ICLERP	4E-8	**5E-8**

14. Forecasted weather and pandemic conditions for the NOED period and any plant vulnerabilities related to weather or pandemic conditions. (IMC 0410, Attachment 1, 07n)

There is no severe weather in the current 7-day forecast for Southport, NC. The National Weather Service forecast for the area is:

- Friday (March 4), partly cloudy, with a high near 56.
- Saturday (March 5), sunny, with a high near 60.

- Sunday (March 6), sunny, with a high near 60.

There is no threat of pandemic conditions during the proposed duration of the enforcement discretion.

15. Basis for the conclusion that the noncompliance will not create undue risk to public health and safety. (IMC 0410, Attachment 1, 07o)

The planned resolution is to complete testing necessary to restore EDG 3 to operable status. This will be accomplished via the existing plant work control processes, which have been successfully implemented in the past. This action will not result in a different, unnecessary transient.

As demonstrated in Item 13, the requested enforcement discretion will not result in more than a minimal increase in risk. There are no foreseen challenges to the available offsite and onsite power sources. Measures have been implemented to prevent any maintenance activities on systems in the plant that could impact the Unit 2 AC power system. Compensatory measures have been implemented to prevent any work activities in the plant that could challenge the availability and reliability of redundant systems. There is no significant difference in nuclear safety risk by extending the LCO 3.0.3 shutdown times to accomplish required repairs and testing. Additionally, there is an inherent safety benefit of restoring EDG 3 without shutting down Unit 2 when compared to shutting down Unit 2 without EDG 3 available.

In addition to the risk insights, sufficient onsite emergency AC power and offsite power supplies remain available to complete their intended safety function. Appropriate plant redundant and support systems (i.e., including non-TS equipment) will be considered as protected systems to ensure there is no undue risk of redundant or support equipment inoperability during the proposed enforcement discretion time frame.

Based on the above, the extended LCO 3.0.3 shutdown times will not create undue risk to public health and safety.

16. Basis for the conclusion that the noncompliance will not involve adverse consequences to the environment. (IMC 0410, Attachment 1, 07p)

This request for enforcement discretion does not result in any significant changes in the types, or significant increase in the amounts, of any effluents that may be released offsite. In addition, no significant increase in individual or cumulative occupational radiation exposures is involved as a result of the request. Therefore, it can be concluded that the NRC's granting of this request for enforcement discretion does not involve any adverse consequences to the environment.

17. Approval by the facility organization that normally reviews safety issues. (IMC 0410, Attachment 1, 07q)

The requested enforcement discretion was reviewed by the BSEP Plant Nuclear Safety Committee and approved at 1345 hours EST on March 4, 2016.

18. Commitment to a written NOED request within two working days and a follow-up license amendment request following the staff's verbal granting of the NOED. (IMC 0410, Attachment 1, 07r)

This letter fulfills the requirement to submit a written enforcement discretion request within two working days.

Based on the short duration of the requested non-compliance, a follow-up license amendment request is not warranted. Additionally, changes to LCO 3.0.3 or current AC power source LCO requirements are not feasible. IMC 0410 states that a follow-up amendment is not required if the NRC agrees before granting the enforcement discretion.