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March 10, 2014

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Document Control Desk

Subject: Duke Energy Carolinas, LLC (Duke Energy)
Catawba Nuclear Station, Unit 1
Docket Number 50-413
Request for Notice of Enforcement Discretion (NOED) Regarding
Technical Specifications (TS):
TS 3.8.1, "AC Sources - Operating" (primary TS)
TS 3.7.8, "Nuclear Service Water System (NSWS)" (secondary TS)
TS 3.7.5, "Auxiliary Feedwater (AFW) System" (secondary TS)
TS 3.6.6, "Containment Spray System" (secondary TS)

Duke Energy requests that the NRC grant discretion from enforcing the shutdown requirements of the above TS. This request was discussed with the NRC staff in a telephone conference call on March 6, 2014. The enforcement discretion was granted verbally by the NRC following the conference call. This submittal (letter and enclosure) fulfills the requirement to submit the written enforcement discretion request within two working days of the oral request.

This request concerns an extension of the TS Completion Times for diesel generator (DG) 1A inoperability and the supported systems governed by the above TS from the current 72 hours by an additional 60 hours for a total of 132 hours. The issue necessitating this NOED request is a misaligned connecting rod bearing on DG 1A. The misaligned bearing is being proactively replaced and the replacement activity cannot be completed within the Completion Time requirements of the above TS. The details of this request are fully explained in the enclosure to this letter.

Catawba had been engaged in preventive maintenance activities on DG 1A when the bearing condition was discovered. As shown in the enclosed justification, Duke Energy maintains that granting of enforcement discretion in this case is in the best interest of nuclear safety.

The enclosure to this letter provides the information required by NRC Inspection Manual Chapter 0410, "Notices of Enforcement Discretion".

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Duke Energy has reviewed NRC Inspection Manual Chapter 0410 and has concluded that Section 06.02a.1(a) is satisfied. Enforcement discretion is required to avoid an unnecessary plant transient, as a result of complying with the requirements of the above TS. Enforcement discretion would minimize potential safety consequences and operational risks.

This NOED request was reviewed and approved by the Catawba Plant Operations Review Committee on March 6, 2014. It was subsequently granted by the NRC on March 6, 2014 at 2000 hours. DG 1A was restored to operable status on March 9, 2014 at 0340 hours.

Inquiries on this matter should be directed to L.J. Rudy, Catawba Regulatory Affairs, at (803) 701-3084.

Sincerely,

Kelvin Henderson
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Enclosure

xc (with enclosure):

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Enclosure
Catawba Nuclear Station, Unit 1
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Background

Duke Energy requests that the NRC grant discretion from enforcing the shutdown requirements of the above TS for a period of time not to exceed 60 hours. This request was discussed with the NRC staff in a telephone conference call on March 6, 2014. The enforcement discretion was granted verbally by the NRC following the conference call. This submittal (letter and enclosure) fulfills the requirement to submit the written enforcement discretion request within two working days of the oral request.

This request concerns an extension of the TS Completion Times for one inoperable diesel generator (DG) and the supported systems governed by the above TS. The issue necessitating this NOED request is a misaligned connecting rod bearing on DG 1A. The misaligned bearing is being proactively replaced and the replacement activity cannot be completed within the Completion Time requirements of the above TS.

The following information is provided to address the items contained in Section 07 of NRC Inspection Manual Chapter 0410, "Notices of Enforcement Discretion".

The onsite standby power source for each 4160 volt Engineered Safety Features (ESF) bus at Catawba is a dedicated DG. For each unit, DGs A and B are dedicated to ESF buses ETA and ETB, respectively. Each DG starts automatically on a Safety Injection (SI) signal (i.e., low pressurizer pressure or high containment pressure) or on an ESF bus degraded voltage or undervoltage signal. After the DG has started, it will automatically tie to its respective bus after offsite power is lost as a consequence of ESF bus undervoltage or degraded voltage, independent of or coincident with an SI signal. The DGs will also start and operate in the standby mode without tying to the ESF bus on an SI signal alone. Following the loss of offsite power, a sequencer strips loads from the ESF bus. When the DG is tied to the ESF bus, loads are then sequentially connected to its respective ESF bus by the automatic load sequencer. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading the DG by automatic load application.

In the event of a loss of offsite power, the ESF electrical loads are automatically connected to the DGs in sufficient time to provide for safe reactor shutdown and to mitigate the consequences of a Design Basis Accident (DBA) such as a Loss of Coolant Accident (LOCA).

Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the DG in the process. Approximately one minute after the initiating signal is received, all loads needed to recover the unit or to maintain it in a safe condition are returned to service.

TS 3.8.1 governs the DGs. Limiting Condition for Operation (LCO) 3.8.1 requires two operable DGs for each unit that is in Modes 1, 2, 3, and 4. With one DG inoperable, the inoperable DG must be restored to operable status within 72 hours per Required Action B.4. If this is not accomplished, the unit must be placed in Mode 3 within 6 hours and in Mode 5 within 36 hours per Required Actions G.1 and G.2.

The NSWS provides a heat sink for the removal of process and operating heat from safety related components during a DBA or transient. During normal operation, and a normal shutdown, the NSWS also provides this function for various safety related and non-safety related components.

The NSWS consists of two independent loops (A and B) of essential equipment. Each loop contains two NSWS pumps, each of which is supplied from a separate DG. Each set of two pumps supplies two trains (1A and 2A, or 1B and 2B) of essential equipment through common discharge piping. While the pumps are unit designated (i.e., 1A, 1B, 2A, 2B), all train-related pumps receive automatic start signals from a corresponding train-related SI or blackout signal from either unit. Therefore, a pump designated to one unit will supply post-accident cooling to equipment in that loop on both units. For example, the 1A NSWS pump, whose emergency power is supplied by DG 1A, will supply post-accident cooling to NSWS trains 1A and 2A.

The NSWS system is shared between the two units. The shared portions of the system must be operable for each unit when that unit is in the mode of applicability. Additionally, both normal and emergency power for shared components must also be operable. If a shared NSWS component becomes inoperable, or normal or emergency power to shared components becomes inoperable, then the required actions of the NSWS LCO must be entered independently for each unit that is in the mode of applicability of the LCO. If both units are in the mode of applicability with the NSWS operating in the normal dual supply and discharge header alignment, one unit may exit the LCO's required actions provided that unit's NSWS pump is operable and one unit's flow path to the associated train non-essential header, AFW pumps, and Containment Spray System heat exchanger is isolated (or equivalent flow restrictions). In this case, sufficient flow is available, however, this configuration results in inoperabilities within other required systems on one unit and the associated required actions must be entered.

One NSWS loop containing two operable NSWS pumps has sufficient capacity to supply post-LOCA loads on one unit and shutdown and cooldown loads on the other unit. Thus, the operability of two NSWS loops assures that no single failure will keep the system from performing the required safety function. Additionally, one NSWS loop containing one operable NSWS pump has sufficient capacity to maintain one unit indefinitely in Mode 5 (commencing 36 hours following a trip from full power) while supplying the post-LOCA loads of the other unit. Thus, after a unit has been placed in Mode 5, only one NSWS pump and its associated DG are required to be operable on each loop, in order for the system to be capable of performing its required safety function, including single failure considerations.

TS 3.7.8 governs the NSWS. LCO 3.7.8 requires two operable NSWS trains for each unit that is in Modes 1, 2, 3, and 4. With one NSWS train inoperable, the inoperable NSWS train must be restored to operable status within 72 hours per Required Action

A.1. If this is not accomplished, the unit must be placed in Mode 3 within 6 hours and in Mode 5 within 36 hours per Required Actions D.1 and D.2.

The NSWS also supports the AFW and Containment Spray Systems since it serves as the assured water source for AFW and cooling water for the Containment Spray System. TS 3.7.5 governs the AFW System. LCO 3.7.5 requires three AFW trains to be operable in Modes 1, 2, and 3, and one motor-driven AFW train to be operable in Mode 4 when the steam generators are relied upon for heat removal. With one AFW train inoperable in Mode 1, 2, or 3 for reasons other than an inoperable steam supply to the turbine-driven AFW pump, the inoperable AFW train must be restored to operable status within 72 hours per Required Action B.1. If this is not accomplished, the unit must be placed in Mode 3 within 6 hours and in Mode 4 within 12 hours per Required Actions C.1 and C.2. TS 3.6.6 governs the Containment Spray System. LCO 3.6.6 requires two containment spray trains to be operable in Modes 1, 2, 3, and 4. With one containment spray train inoperable, the inoperable containment spray train must be restored to operable status within 72 hours per Required Action A.1. If this is not accomplished, the unit must be placed in Mode 3 within 6 hours and in Mode 5 within 84 hours per Required Actions B.1 and B.2.

Need for Enforcement Discretion

Enforcement discretion is needed to avoid an unnecessary shutdown of Catawba Unit 1 without a commensurate benefit in nuclear safety. NRC Inspection Manual Chapter 0410 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 on a case-by-case basis.

On March 4, 2014 at 0329 hours, DG 1A was declared inoperable for planned maintenance activities. Part of this maintenance activity involved taking position measurements of the piston connecting rod bearings. The bearing is normally held in place by the pressure of the two connecting rod halves. These measurements are taken once every 18 months for each DG. While taking these measurements, it was discovered that the bearing for connecting rod number 7 had rotated approximately 25 degrees from its normal horizontal position (i.e., the bearing had rotated within the connecting rod). Based on this initial observation, Catawba decided to remove the bearing to allow for an analysis of the cause of the rotation. After inspection of the removed bearing it was determined that the amount of movement did not challenge the ability of the bearing to perform its function. Catawba mobilized a full time response team at approximately 1100 hours in response to the situation. All parts needed for the repair are on site. Absent enforcement discretion from the NRC, Unit 1 would have to begin a unit shutdown no later than March 7, 2014 at 0329 hours and be in hot standby in 6 hours (0929) and cold shutdown in 36 hours (1529 on March 8, 2014).

a. Type of NOED being requested.

A regular NOED is being requested to avoid an unnecessary transient (shutdown) as a result of compliance with the TS. Compliance with the TS would result in an unnecessary shutdown of Catawba Unit 1 without a corresponding health and safety benefit.

b. The TS or other license conditions that will be violated.

Catawba is requesting enforcement discretion from TS 3.8.1, TS 3.7.8, TS 3.7.5, and TS 3.6.6 Completion Times as indicated above.

c. 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.

Likely Cause

The bearing shells on the Catawba DGs are a split design where two separate halves are installed over the crankshaft journal and then held in place by the crushing force of the connecting rods. In order for a bearing shell to rotate, the tangential force between the crankshaft journal and the bearing shell must be greater than the tangential force between the bearing shell outer diameter and the connecting rod journal inner diameter. Performance history (this bearing was installed in 2006) and inspection of the removed bearing shells refutes the majority of the potential causes for bearing shell rotation. The most probable cause based on information to date is marginal bearing shell geometrical tolerances under crush conditions. The removed bearing will be sent to the bearing manufacturer for failure analysis, including measurement of the design crush to support the root cause evaluation.

Bearing number 7 was last inspected for proper alignment on October 16, 2012 as part of an 18-month inspection and was found to be in the proper alignment. The as-found condition of bearing number 7 after removal strongly suggests the rotation of the bearing shells was a discreet event with the DG successfully operating following shell movement, as opposed to continuous or progressive shell movement over time. Catawba believes that this is an isolated case but has decided to accelerate the 18 month bearing alignment inspections on the other 3 DGs (1B, 2A, 2B) beginning next week, after careful evaluation of upcoming work schedules.

The need for prompt action

There was no action that Catawba could have taken to avoid the need for this NOED request. This maintenance evolution was part of a routine 18 month preventative maintenance inspection being performed under a critical activity plan, and the circumstances requiring the need for this NOED request were unforeseen.

The action taken to avoid the need for a NOED

Upon discovery of the connecting rod bearing shell movement, all work activities have been continuing around the clock. A full time response team has been continually staffed and resources are being provided as necessary to address the unexpected situation.

Relevant Historical events:

- **any other similar events at the plant**
  There have been two other DG related NOEDs submitted by Catawba and granted by the NRC in recent history. One occurred in July of 2010 (turbocharger replacement) and the other occurred in February of 2011 (mechanical governor replacement). However, neither of these NOEDs involved issues with a connecting rod bearing. In 2006, a catastrophic failure occurred on DG 1A connecting rod number 4. Per the cause evaluation for this event, the most probable cause of the failure was babbitt overlay wearing excessively due to material and dimensional deficiencies. As part of the extent of condition review, bearing shells on the number 6 connecting rod on DG 1A were found slightly misaligned. The cause evaluation concluded that the extent of condition was limited to a specific bearing manufacturing lot; all bearings from this lot were subsequently replaced. Corrective actions from the cause evaluation included performing alignment checks on connecting rod bearings on all DGs on an 18-month frequency.

- **the last maintenance performed on the equipment or similar equipment**
  The last connecting rod bearing position measurements for the DGs were reviewed and these previous position measurements were normal.

  The DG 1A number 7 connecting rod bearing was last replaced in 2006 as part of routine maintenance prior to the failure that occurred on the number 4 bearing shell. There have been numerous maintenance activities since 2006, but none that would have affected the connecting rod bearings.

- **any outstanding amendment or TS change requests related to the NOED**
  There are no outstanding amendment or TS changes that relate to this NOED.

- **the last NOED request**
  The written paperwork associated with the last approved NOED request was submitted on March 1, 2011 and was associated with the mechanical governor of DG 1B.

d. Cause of the situation that led to the NOED request.

The cause of the current situation is the discovery of the DG 1A number 7 connecting rod bearing shell misalignment, necessitating bearing shell removal and inspection which could not be performed within the 72-hour Completion Time of TS 3.8.1 Required Action B.4. Item c. above discusses the likely cause of the observed bearing rotation.

e. Course of action to resolve the situation until the situation no longer warrants a NOED.

The following timeline describes the major sequence of events that have transpired and are expected to occur until this situation is resolved:

Date/Time	Event
3/4/14/0329	DG 1A was declared inoperable for pre-outage related preventive maintenance activities. These activities included taking position measurements of the piston connecting rod bearings.

~0930	Maintenance discovered that the bearing for connecting rod number 7 had rotated approximately 25 degrees from its normal horizontal position.
1030	Maintenance and Engineering met to discuss the situation and determine its significance.
1100	A formal response team was initiated to respond to this issue.
1800-2300	Operations drained the jacket water cooling system and tagged the DG in preparation for Maintenance activities.
2300	Maintenance activities began. A brief summary of the major maintenance activities completed or to be performed is as follows: • Remove valve covers, rocker boxes, and cylinder heads. • Remove affected piston and link rod and secure piston and master rod. • Remove connecting rod bearing from crankshaft journal. • Inspect crankshaft journal and install new connecting rod bearing. • Reconnect piston and master rod and install piston and link rod. • Install connecting rod bolting and torque and lockwire. • Install cylinder heads, rocker boxes, and valve covers.
----	Following the completion of the above Maintenance activities, Operations will clear tags, refill the jacket water cooling system, heat up the system, and top off lubricating oil level.
3/8/14/1200 (estimated)	DG 1A is projected to be available.
Afternoon	Operations will run the engine for functional break-in run and required testing.
2100 (estimated)	DG 1A is projected to be operable.

f. Demonstrate that the resolution itself does not result in a different, unnecessary transient.

The above activities will not result in any transient to the unit. DG 1A is tagged out for maintenance. It will undergo post-maintenance testing prior to being interfaced with the electrical distribution system and the testing will not perturb the electrical distribution system or result in any change in status of other plant systems.

g. Demonstrate that there was insufficient time to process an emergency TS change or license amendment or that a license amendment is not needed.

TS 3.8.1 Condition B has a 72-hour Completion Time for one inoperable DG. When the issue with the connecting rod bearing rotation was discovered, station management was notified and station resources were directed to evaluate the condition and determine repairs. Plant staff was assembled to support around-the-clock evaluation of this condition. Once the evaluation and repair plan was developed, it was determined that there was insufficient time for Catawba to prepare and the NRC to process and approve an emergency TS change request.

h. The condition and operational status of the plant (including safety related equipment out of service or otherwise inoperable).

Both units are presently in Mode 1 at 100% power operation. There is no safety related or risk significant non-safety related equipment inoperable which has a bearing on this NOED request. DGs 1B, 2A, and 2B are all fully operable.

i. Time period for the NOED, including justification for the duration of noncompliance.

This NOED request is for 60 additional hours beyond the end of the original completion time (March 7, 2014 at 0329 hours). This time is based on the work activities remaining to install the new connecting rod bearing and reassemble DG 1A, restoration of DG 1A support systems, and associated testing and inspections. DG 1A should become available by 1200 hours on March 8, followed by functional tests and an operability run. DG 1A is expected to be declared operable at 2100 hours on March 8. The request for 60 hours includes approximately 18 hours of margin for any schedule delays. No other issues are expected with DG 1A apart from the issue identified in this NOED request.

j. Detail and explain compensatory actions the plant has both taken and will take to reduce the risk associated with the specific configuration.

A complete discussion of compensatory actions and their significance relative to risk reduction is contained in Item I.3. below.

k. The status and potential challenges to offsite and onsite power sources.

Currently the grid is stable. No challenges to grid stability are expected as a result of severe weather or other events. Refer to the detailed weather forecast below. Switchyard or grid work that would impact grid reliability will be restricted during the NOED period.

DGs 1B, 2A, and 2B are operable. No elective maintenance or testing activities will be allowed on these components during the NOED period.

l. The safety basis for the request, including an evaluation of the safety significance and potential consequences of the proposed course of action.

1. Use of zero maintenance model

The configuration for the requested extension was analyzed using the zero maintenance PRA model and the zero maintenance Fire PRA model.

2. Dominant risk contributors

Large Early Release Frequency (LERF) is the limiting risk metric. The dominant contributors to LERF include:

Fires – A challenging fire impacts the power to Train 1B equipment or directly impacts Train 1B equipment. The fire either directly or indirectly results in a loss of offsite power. With DG 1A unavailable, the operators will staff the SSF during the period of extended completion time. Failure of the SSF, turbine-driven AFW pump, or suction to the turbine-driven AFW pump results in core damage. Loss of the hydrogen igniters due to loss of power leads to containment failure should there be a hydrogen detonation.

Non-fires are similar to fires but with a loss of offsite power event followed by a failure of DG 1B. With DG 1A unavailable, the operators will staff the SSF during the period of extended completion time or restore offsite power. Failures of the SSF, turbine-driven AFW pump, or suction to the turbine-driven AFW pump lead to core damage if offsite power is not restored. Loss of the hydrogen igniters due to loss of power leads to containment failure should there be a hydrogen detonation.

The Core Damage Frequency (CDF) sequences are similar to the LERF sequences except that hydrogen igniter failure is not needed for core damage.

3. Compensatory risk management actions

In general terms, the following compensatory measure strategy will be employed:

- Defer non-essential surveillances or other maintenance activities on equipment required by TS and on risk significant equipment. This action reduces risk associated with the NOED extension period in that other risk significant equipment is not removed from service at the same time as DG 1A.

The following specific compensatory measures are being taken to reduce the risk during the NOED period:

- The full time response team will remain in place throughout the evolution and the remaining maintenance activities will be completed utilizing 24-hour coverage.
- The Standby Shutdown Facility (SSF) will be staffed. This action will improve the reliability of the SSF by reducing the time required to staff the SSF following an event. This action will improve the operator success probability for events such as fires by reducing the confusion/stress associated with the early stages of a fire. The operator will already be at the SSF and will not need to travel through the plant to the SSF.
- Dedicated operators will be assigned to: 1) transfer plant control from the control room to the SSF if necessary, and 2) transfer power for the hydrogen igniters from normal power to SSF power if necessary. These

actions improve the operator success probability by designating the specific operators to perform the specific task. SSF and hydrogen igniters are important equipment identified in the risk analysis.

- Continuous fire watches with suppression capability will be implemented for fire areas deemed to be high risk. These fire zones include 8 (Unit 1 Essential Switchgear Room 1ETB), 10 (Unit 1 Battery Room), and 45 (Unit 1 Cable Room Corridor). These zones are included in the top ten fire scenarios for both CDF and LERF. Having a continuous fire watch with the capability to suppress fires reduces the probability that small fires will grow to a challenging fire before being discovered and extinguished.
- The following equipment will be protected in accordance with station procedures and no surveillances or maintenance activities will be allowed except for emergent issues:
  - -- DG 1B and equipment supported by it
  - -- SSF
  - -- Unit 1 turbine-driven AFW pump
  - -- Switchyard and Unit 1 transformer yard
- Prior to entering the period of enforcement discretion, the operating crews will review the procedures governing operation of the SSF, operation of the Unit 1 turbine-driven AFW pump, tripping of the reactor coolant pumps, initiating reactor coolant system feed and bleed, and cross tying AC power between the units.
- Operations will contact the system dispatcher once per day to ensure no significant grid perturbations are expected and no planned switching actions in the Catawba switchyard.
- Closer controls over transient combustibles will be provided to reduce the contribution of these fire sources during the period of enforcement discretion.

Deferring non-essential surveillances and maintenance activities on equipment required by TS and risk significant equipment will provide a measure of risk reduction, though not specifically quantified.

4. Extent of condition

Since the cause evaluation is still in progress, an inspection of DGs 1B, 2A, and 2B connecting rod bearing shell alignment will be performed beginning the week of March 10, 2014.

There is no history of bearing shell rotation on DGs 1B, 2A, and 2B. These three engines have operated for approximately 7900 hours combined spanning approximately 4100 starts without a bearing alignment issue. Since initiating the preventive maintenance inspection for bearing rotation in 2006, no rotation has been observed during performance of the evolution until the current issue with the number 7 connecting rod bearing shell on DG 1A (DG 1A has operated approximately 500 hours spanning 120 starts since the bearing shells were installed). It should also be noted that there was no identified rotation of bearings during the first time performance of the preventive maintenance evolutions in 2006.

Catawba, in consultation with the DG vendor, has selected the replacement bearing shells in stock for the DG 1A number 7 connecting rod bearing that produce the maximum crush when installed based on geometrical measurements.

As part of the cause evaluation process, an evaluation for reportability under 10 CFR Part 21 will be performed as appropriate.

Based on the known extent of condition, this issue is limited to DG 1A. However, to address an NRC question, the common cause factors were evaluated and determined to have a negligible impact.

5. External event risks

External events (fire, high winds, and internal flood) are accounted for in the PRA models with the exception of seismic events and external flooding. The seismic results typically are not sensitive to unavailability of individual components and the seismic contribution is judged to be insignificant relative to the non-seismic contribution. This assumption is further supported because the seismic Initiating Event Frequency (IEF) is less than the loss of offsite power IEF. The external flooding has been evaluated as not a hazard requiring evaluation based upon the predicted weather during the NOED time frame.

Based on the forecasted weather, the high wind (tornado) events were set to zero.

The PRA analysis includes the following events:

- Internal events (including internal flood)
- Fire events

m. Demonstrate the NOED condition, along with any compensatory measures, will not result in more than a minimal increase in radiological risk.

The results meet the criteria of NRC Inspection Manual Chapter 0410 for 60 hours. Continued operation of the unit during the period of enforcement discretion will not cause risk to exceed the level determined acceptable during normal work controls and therefore there is not a net increase in the radiological risk to the public. For the additional time period that DG 1A is expected to be unavailable (approximately 33 hours), the risk metrics described by the NOED guidance of Incremental Conditional Core Damage Probability (ICCDP) less than or equal to 5.0E-07 and Incremental Conditional Large Early Release Probability (ICLERP) less than or equal to 5.0E-08 are not exceeded. When consideration of contingency (up to 60 hours) is included, the risk metrics are exceeded by a small amount.

As noted, the increase in conditional core damage probability (ICCDP) and the increase in conditional large early release probability (ICLERP) are slightly above the guideline of 5.0E-07 (ICCDP) and 5.0E-08 (ICLERP) when considering the entire enforcement discretion period requested. This is acceptable due to a number of significant conservatisms in the analysis that drive the results. The ICCDP and ICLERP results are largely driven by fire results as shown in the table below. A number of fire risk and non-fire risk compensatory actions are not included in the quantitative results (i.e., not quantified).

There are a number of important conservative assumptions included in the fire PRA. These assumptions and the compensatory risk mitigation actions that are not included in the quantitative results provide assurance that the risk increase to the public is not more than a minimal increase.

The analysis of fire LERF was not adjusted to reflect the stationing of an operator at the SSF, which improves the likelihood of operator success in mitigating any fire events that could cause a loss of offsite and emergency power. The stationing of an operator at the SSF improves many of the applicable performance shaping factors, improves the time available, and reduces operator stress and potential confusion associated with fires.

Similarly, the effort to provide closer controls over transient combustibles would reduce the contribution to these fire sources during this requested NOED. The operator review of the turbine-driven AFW pump operation is another compensatory action that is not included in the quantitative results.

The fire PRA results are driven by the assumed heat release rates and fire growth models, which result in fire damage targets very quickly and are not representative of actual industry fire experience. Other conservative assumptions in the fire PRA artificially increase the importance of DGs, where offsite power is assumed to be lost in many fires due to the lack of definitive applicable cable routing information and circuit failure analysis for scenarios where offsite associated cables are not known to be located.

The table below is a Comparison of Fire and Non-Fire Results. This table does not include any credit for compensatory actions or refinement of known conservatisms in the Fire PRA:

ICCDP	1 hour	60 hours
Non-Fire	3.4E-09	2.1E-07
Fire	7.9E-09	4.8E-07
Total	1.1E-08	6.9E-07

ICLERP	1 hour	60 hours
Non-Fire	4.2E-10	2.5E-08
Fire	1.1E-09	6.6E-08
Total	1.5E-09	9.1E-08

Catawba is confident that that the risk increase associated with the additional 60 hours is less than the goal of 5.0E-07 ICCDP and less than 5.0E-08 ICLERP as discussed in the NRC guidance from Inspection Manual Chapter 0410. This is based upon the fire risk contribution having the largest amount of embedded conservatism and it being the largest contributor to risk.

In order to better understand the impact of the compensatory actions and provide reasonable assurance of our assumptions, a sensitivity analysis was performed to demonstrate the impact of these compensatory actions.

The fire watches in fire zones 8, 10, and 45 were credited using the non-suppression probability from continuously manned locations and the removal of any previous credit suppression. Then credit for operator staging and staffing was taken. This

application removed some of the fire stress factors that are applied to most of the operator actions. These two sensitivities indicate that the risk increase is below the goal of 5.0E-07 (ICDDP) and 5.0E-08 (ICLERP) for a 60-hour Completion Time extension.

The additional conservatism for loss of commercial power has been verified in that commercial power is not routed through the Switchgear Room (fire zone 8) or the Battery Rooms (fire zone 10). This has a direct risk reduction for DGs as commercial power will be available to support the AFW suction source. Two additional risk compensatory measures that have been discussed (transient combustible control improvement and operator staffing of the SSF) have not been included in the sensitivity but would further reduce the risk of this NOED. These adjustments were only applied to the fire results.

The results of these sensitivities are:

ICCDP	1 hour	60 hours
Non-Fire	3.4E-09	2.1E-07
Fire	2.7E-09	1.6E-07
Total	6.1E-09	3.7E-07

ICLERP	1 hour	60 hours
Non-Fire	4.2E-10	2.5E-08
Fire	1.7E-10	1.0E-08
Total	5.9E-10	3.5E-08

By crediting certain compensatory actions into the quantitative risk analysis and by utilizing realistic assumptions, the results above demonstrate that the NRC guidance for granting of a NOED based on the plant risk profile over the period of enforcement discretion is satisfied and that the granting of this NOED request does not create undue risk to the health and safety of the public.

n. Discuss forecasted weather and pandemic conditions for the requested NOED period and any plant vulnerabilities related to weather and pandemic conditions.

The weather forecast for the area for the next several days is as follows (as of March 6, 2014 at 1425 hours):

> Rain and freezing rain are expected across the Carolinas Service Area from Thursday afternoon through Friday morning. Some of the latest model guidance has trended wetter and colder since this morning, so there is increased concern that significant power outages are possible with this event. As of this afternoon, the greatest concern for ice accumulations in excess of 0.25" is from the I-40 corridor southward to the North Carolina/South Carolina border. However, it must be stressed that there is still a lot of uncertainty with this event and that a 1-2 degree temperature shift in either direction could alter the forecast considerably.
>
> An area of low pressure developed over the northern Gulf of Mexico last night and is tracking northeastward across north-central Florida this afternoon, then will continue along the Carolina coast through Friday. Precipitation will reach the South Carolina zones this afternoon, then continue to overspread the entire area overnight. The precipitation may begin as rain, but then a transition to freezing rain is expected through the evening as

northerly winds increase and surface temperatures drop to around the freezing mark. Then, freezing rain is expected along and northwest of the I-85 corridor overnight and through mid-morning on Friday before temperatures gradually warm above freezing and a transition to rain ensues.

In addition to the freezing rain threat, it will be breezy across the Service Area as the storm system strengthens along the coast. Winds will increase to 10 to 15 mph this afternoon and then to 15 to 20 mph overnight continuing through tomorrow. Gusts up to 30 mph will be possible tonight into tomorrow.

With this event, surface temperatures are going be very close to 32 degrees, so if temperatures only drop to 33-34 degrees overnight, then ice accumulations on surfaces will be less. However, temperatures just above the surface will most likely drop below 32 degrees, allowing for freezing rain accumulation on trees and power lines.

There are no pandemic considerations associated with this NOED request.

o. The basis for the conclusion that the noncompliance will not be of potential detriment to the public health and safety.

Duke Energy has evaluated the proposed request and determined that it involves no significant hazards considerations. According to 10 CFR 50.92, "Issuance of amendment", paragraph (c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

(A) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

(B) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(C) Involve a significant reduction in a margin of safety.

In support of this determination, an evaluation of each of the three criteria set forth in 10 CFR 50.92 is provided below regarding the proposed action.

(A) The request for enforcement discretion does not involve a significant increase in the probability of occurrence or consequences of any accident previously evaluated.

The probability of occurrence of an accident will not be significantly affected by granting this enforcement discretion. The requested extension of the Completion Times does not affect the way in which the unit is operated, and thus does not affect the frequency of any initiators for accidents evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the proposed enforcement discretion does not alter any plant equipment or operating practices in such a manner that the probability of an accident is increased. Further, the proposed enforcement discretion will not alter assumptions relative to the mitigation of an accident or transient event. Reactor protection system performance will remain within the bounds of the previously performed accident analyses and will continue to function in a manner consistent with the plant design basis. As discussed in the response to Item m. above, for the additional time period that DG 1A

is expected to be unavailable (approximately 33 hours), the risk metrics described by the NOED guidance of Incremental Conditional Core Damage Probability (ICCDP) less than or equal to 5.0E-07 and Incremental Conditional Large Early Release Probability (ICLERP) less than or equal to 5.0E-08 are not exceeded. When consideration of contingency (up to 60 hours) is included, the risk metrics are also not exceeded. The ICCDP and ICLERP results are largely driven by fire results as discussed in the response to Item m. above. The additional allowed time does not result in a condition where the design, material, and construction standards that were applicable prior to the change are altered. The proposed change will not modify any system interface. The proposed change will not affect the probability of any event initiators. There will be no change to the normal plant operating parameters or accident mitigation performance. The proposed change will not alter any assumptions or change any mitigation action in the radiological consequence evaluations in the UFSAR.

Therefore, the requested enforcement discretion does not significantly increase the probability or consequences of an accident previously evaluated.

(B) The request for enforcement discretion does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed action does not involve physical alteration of the unit. No new equipment is being introduced and installed equipment is not being operated in a new or different manner. There is no change being made to the parameters within which the unit is operated. There are no setpoints at which protective or mitigative actions are initiated that are affected by this proposed action. This proposed action will not alter the manner in which equipment operation is initiated nor will the function demands on credited equipment be changed. No alteration in the procedures which ensure the unit remains within analyzed limits is proposed, and no change is being made to procedures relied upon to respond to an off-normal event. As such, no new failure modes are being introduced. The proposed action does not alter assumptions made in the safety analysis. Therefore, the proposed action does not create the possibility of a new or different kind of accident from any accident previously evaluated.

(C) The proposed request for enforcement discretion does not involve a significant reduction in a margin of safety.

Specifically, based on the operability of the remaining Unit 1 diesel generator (1B) and offsite power sources, the accident analysis assumptions continue to be met with the enactment of the proposed enforcement discretion. The system's design and operation are not affected by the proposed enforcement discretion. The safety analysis acceptance criteria are not altered by the proposed changes. Finally, the proposed compensatory measures identified will provide assurance that no significant reduction in safety margin will occur.

p. The basis for the conclusion that the noncompliance will not involve adverse consequences to the environment.

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

request for enforcement discretion will not involve any adverse consequences to the environment.

q. A statement that the request has been approved by the facility organization that normally reviews safety issues (Plant Onsite Review Committee or equivalent).

This request was approved by the Catawba Plant Operations Review Committee on March 6, 2014.

r. Commitment to written NOED request within 2 working days and a follow-up license amendment request following the NRC's verbal granting of the NOED.

This submittal is the written NOED request following the verbal approval granted on March 6, 2014.

This request for enforcement discretion involves a non-compliance with a TS Required Action Completion Time that is not expected to recur. Based on the short duration (a maximum of 60 hours) of the requested non-compliance, a follow-up license amendment request is not warranted. The NRC agreed during the conference call providing verbal approval of the NOED that no other follow-up amendment request is required.

s. Provide additional information if the NOED request is a natural event NOED.

This section is not applicable, as this is not a natural event NOED.